EXHIBIT 2, PART 1

US00RE37885E

(19) **United States**

(12) **Reissued Patent**
Acres et al.

(10) **Patent Number: US RE37,885 E**

(45) **Date of Reissued Patent: Oct. 15, 2002**

(54) **METHOD AND APPARATUS FOR OPERATING NETWORKED GAMING DEVICES**

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(73) Assignee: **Acres Gaming, Inc.**, Las Vegas, NV (US)

(*) Notice: This patent is subject to a terminal disclaimer

(21) Appl. No : **09/573,470**

(22) Filed: **May 16, 2000**

Related U.S. Patent Documents

Reissue of:

(64) Patent No : **5,752,882**
Issued: **May 19, 1998**
Appl. No : **08/465,915**
Filed: **Jun. 6, 1995**

U.S. Applications:
(

(62) Division of application No. 08/322,172, filed on Oct. 12, 1994, now Pat. No. 5,655,961

(51) **Int. Cl.**[7] **A63F 9/00**

(52) **U.S. Cl.** **463/42**; 463/16; 463/25

(58) **Field of Search** 463/42, 16, 25–28, 463/20

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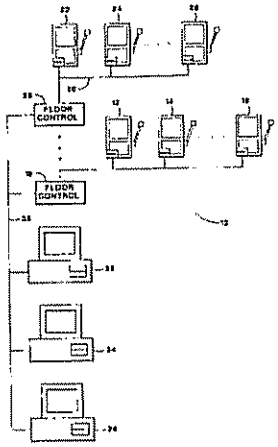
Primary Examiner—Joe H. Cheng
Assistant Examiner—Julie Kasick
(74) *Attorney, Agent, or Firm*—Marger Johnson & McCollom, PC

(57) **ABSTRACT**

A system for monitoring and configuring gaming devices interconnected over a high-speed network is disclosed. The system can support a file server, one or more floor controllers, one or more pit terminals, and other terminals all interconnected over the network. Each gaming device includes an electronic module which allows the gaming device to communicate with a floor controller over a current loop network. The electronic module includes a player tracking module and a data communication node. The player tracking module includes a card reader for detecting a player tracking card inserted therein which identifies the player. The data communication node communicates with both the floor controller and the gaming device. The data communication node communicates with the gaming device over a serial interface through which the data communication node transmits reconfiguration commands. The gaming device reconfigures its payout schedule responsive to the reconfiguration commands to provide a variety of promotional bonuses such as multiple jackpot bonuses, mystery jackpot bonuses, progressive jackpot bonuses, or player specific bonuses.

57 Claims, 34 Drawing Sheets



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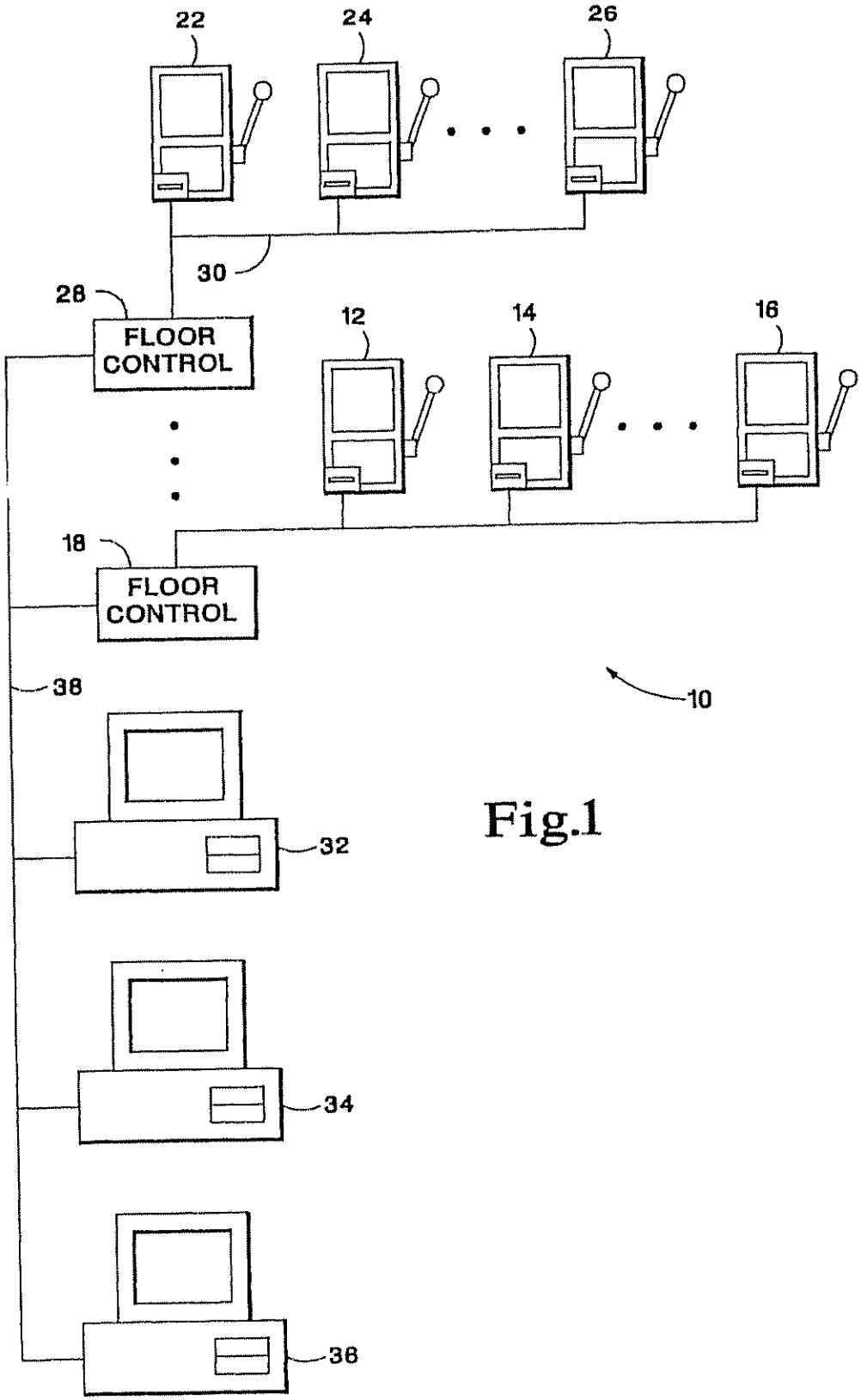

22
24
26
30
28
FLOOR CONTROL
12
14
16
18
FLOOR CONTROL
38
10
32
34
36

Fig.1

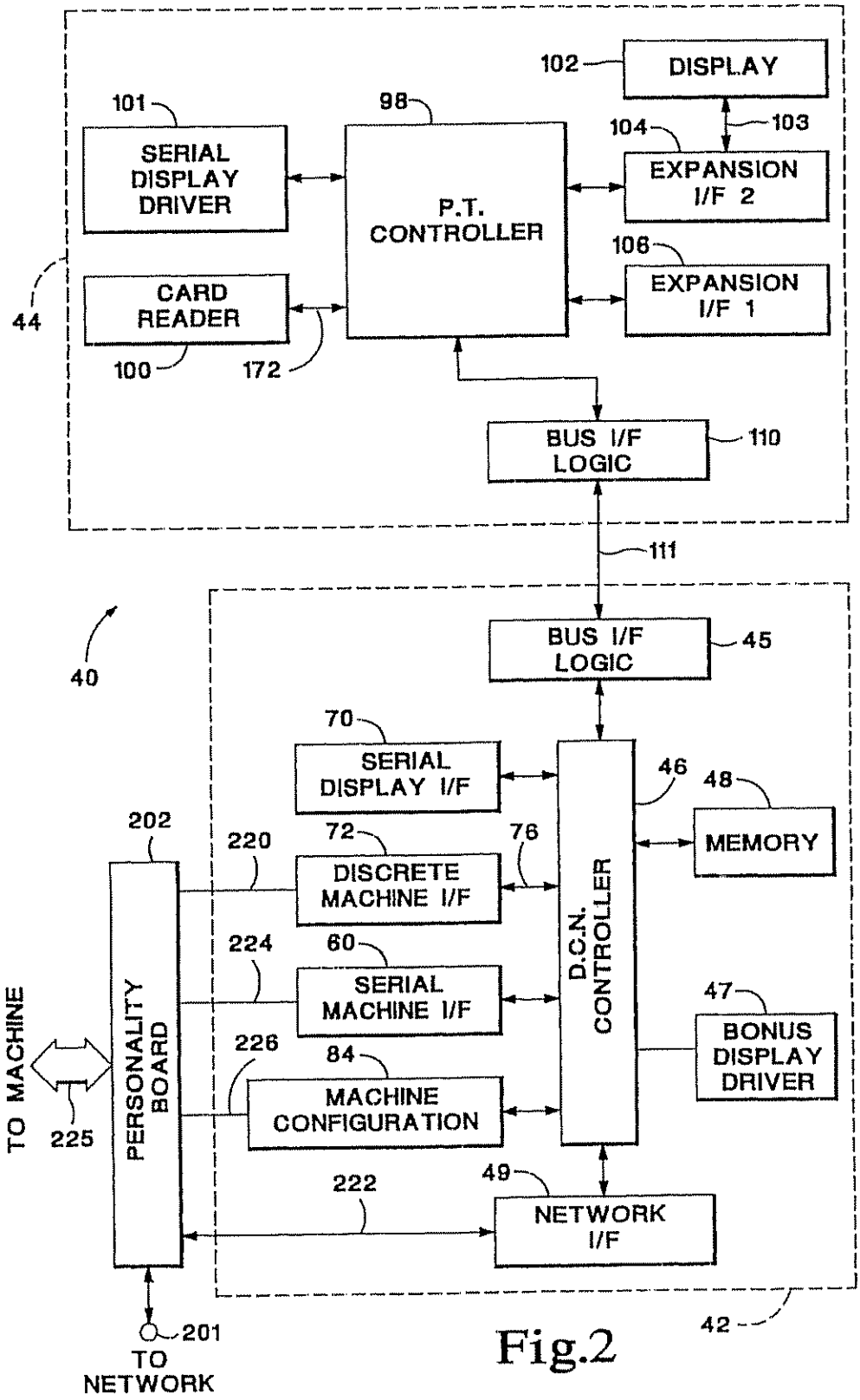

102
DISPLAY
101
SERIAL DISPLAY DRIVER
98
P.T. CONTROLLER
104
103
EXPANSION I/F 2
106
EXPANSION I/F 1
44
CARD READER
100
172
BUS I/F LOGIC
110
111
40
BUS I/F LOGIC
45
70
SERIAL DISPLAY I/F
46
48
MEMORY
202
220
72
DISCRETE MACHINE I/F
76
D.C.N. CONTROLLER
224
60
SERIAL MACHINE I/F
47
BONUS DISPLAY DRIVER
226
84
MACHINE CONFIGURATION
TO MACHINE
225
PERSONALITY BOARD
222
49
NETWORK I/F
201
TO NETWORK
42

Fig.2

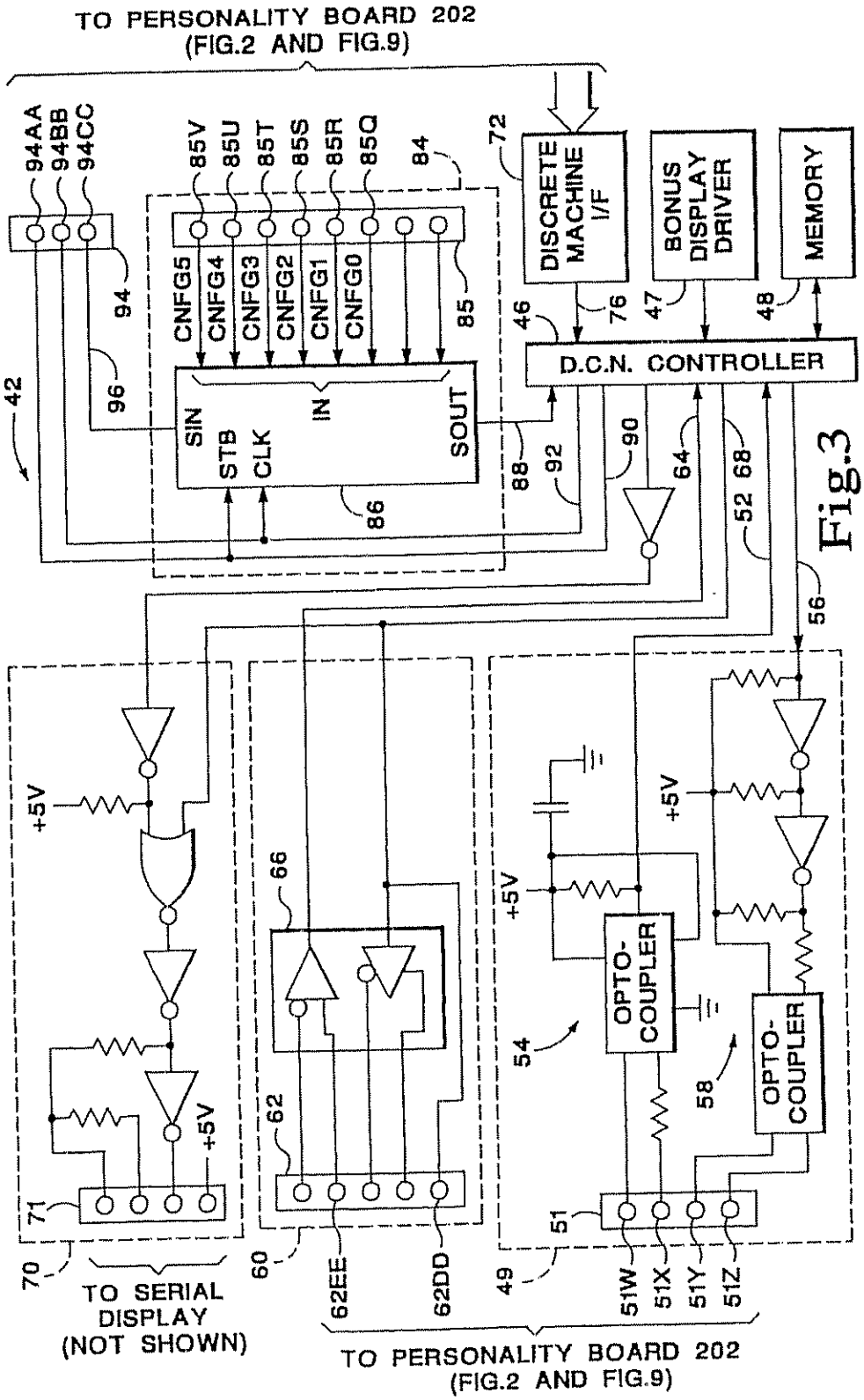

TO PERSONALITY BOARD 202
(FIG.2 AND FIG.9)
94AA
94BB
94CC
85V
85U
85T
85S
85R
85Q
84
72
DISCRETE MACHINE I/F
BONUS DISPLAY DRIVER
MEMORY
CNFG5
CNFG4
CNFG3
CNFG2
CNFG1
CNFG0
94
85
46
76
47
48
D.C.N. CONTROLLER
42
96
SIN
STB
CLK
IN
SOUT
88
92
90
64
52
68
86
56
+5V
66
62
71
70
TO SERIAL DISPLAY
(NOT SHOWN)
60
62EE
62DD
OPTO-COUPLER
54
58
51
49
51W
51X
51Y
51Z
TO PERSONALITY BOARD 202
(FIG.2 AND FIG.9)

Fig.3

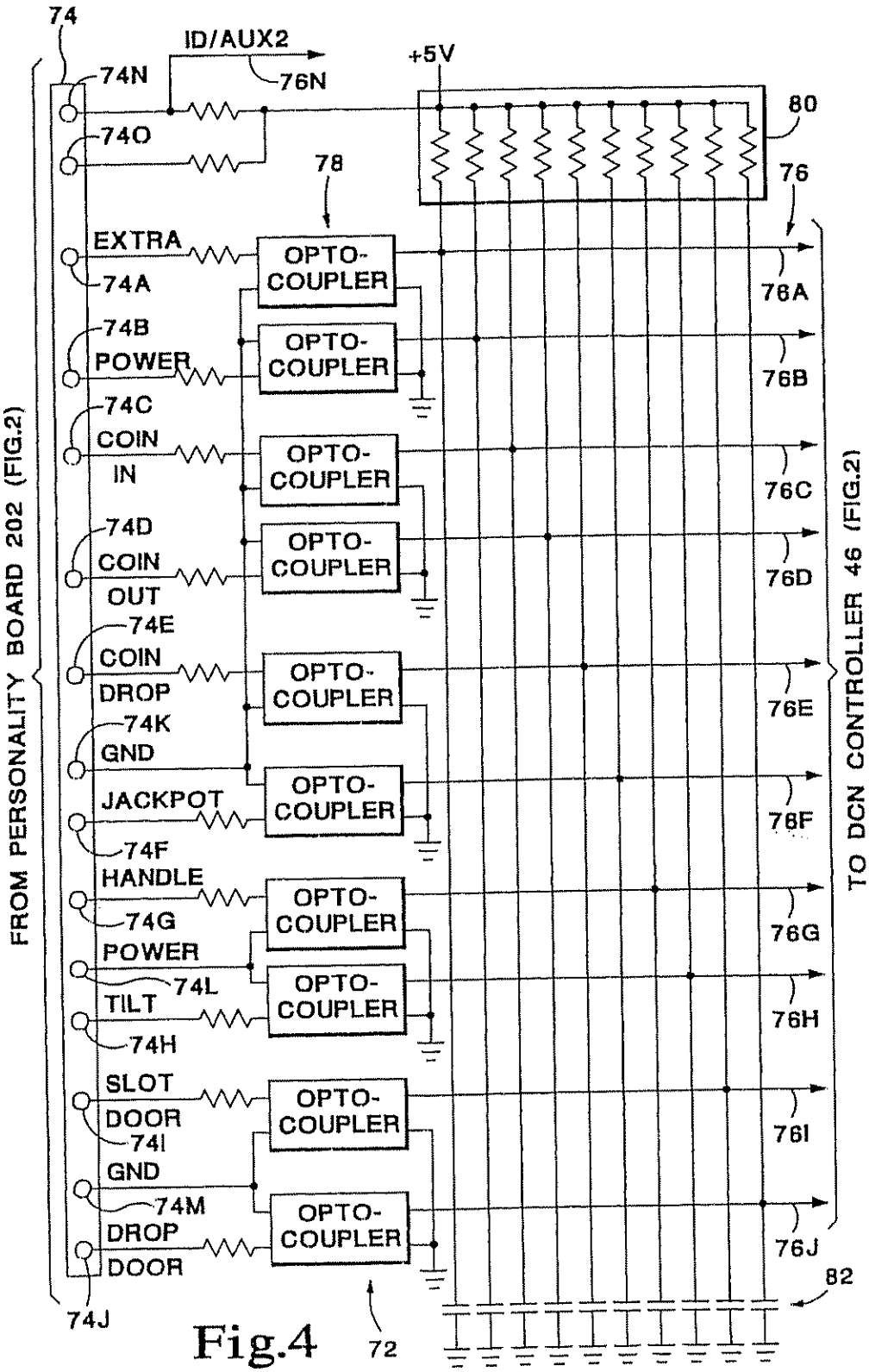
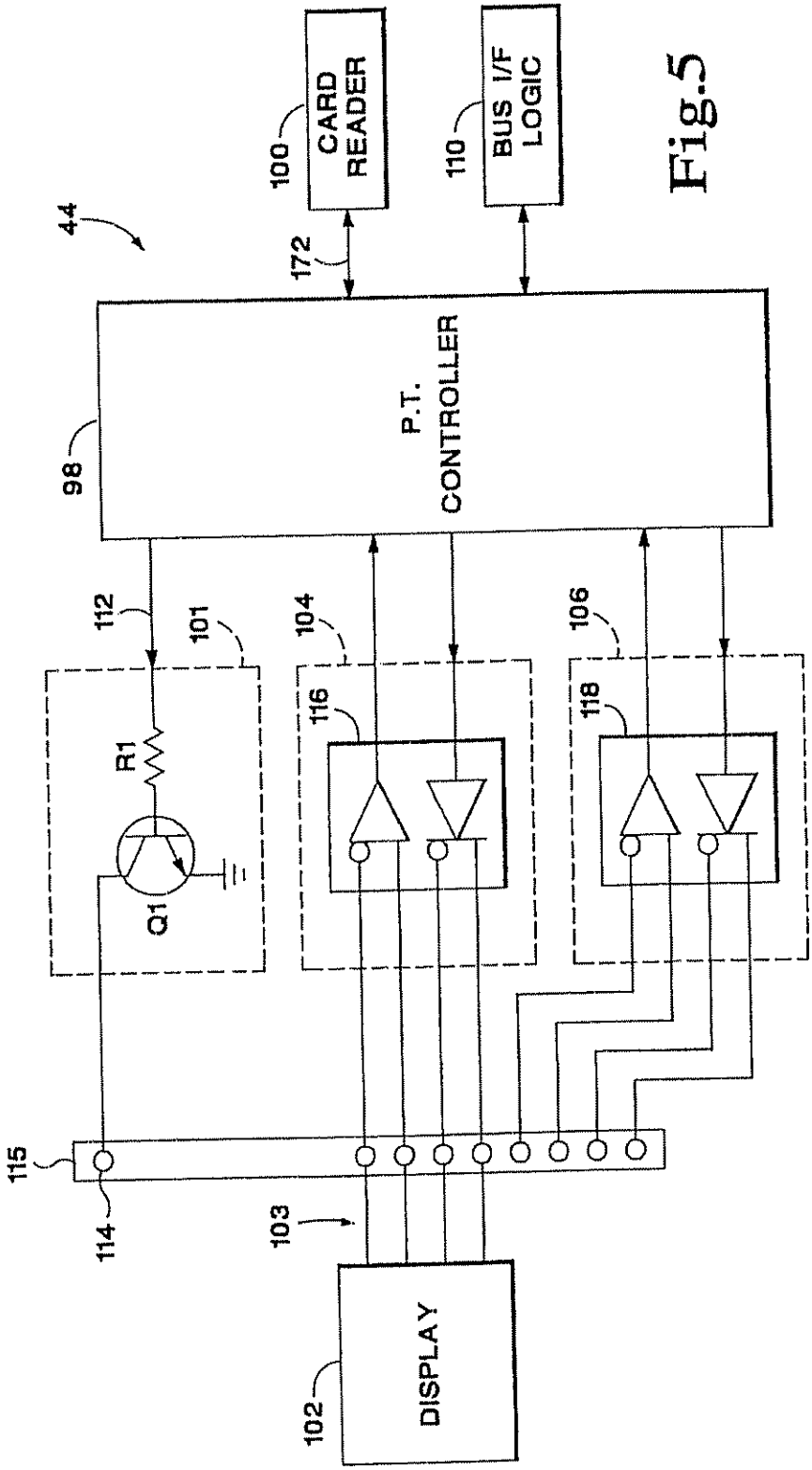

74
ID/AUX2
+5V
74N
76N
74O
80
78
76
EXTRA
74A
OPTO-COUPLER
76A
74B
POWER
OPTO-COUPLER
76B
74C
COIN
IN
OPTO-COUPLER
76C
74D
COIN
OUT
OPTO-COUPLER
76D
74E
COIN
DROP
OPTO-COUPLER
76E
74K
GND
JACKPOT
OPTO-COUPLER
76F
74F
HANDLE
74G
OPTO-COUPLER
76G
POWER
74L
TILT
OPTO-COUPLER
76H
74H
SLOT
DOOR
74I
OPTO-COUPLER
76I
GND
74M
DROP
DOOR
OPTO-COUPLER
76J
82
74J
72
FROM PERSONALITY BOARD 202 (FIG.2)
TO DCN CONTROLLER 46 (FIG.2)

Fig.4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100
CARD READER
110
BUS I/F LOGIC
172
98
P.T. CONTROLLER
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101
104
106
116
118
R1
Q1
115
114
103
102
DISPLAY

Fig.5

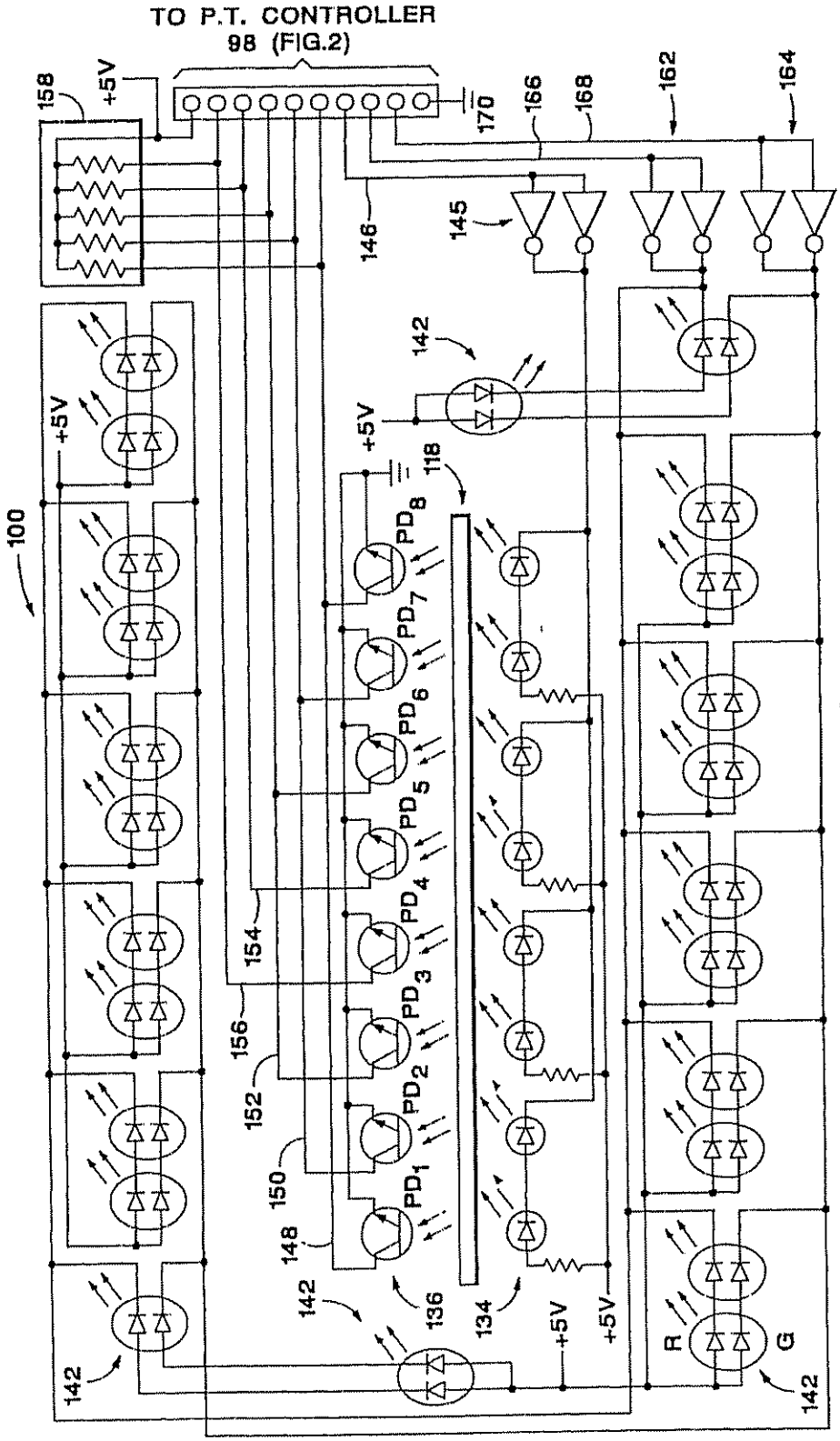
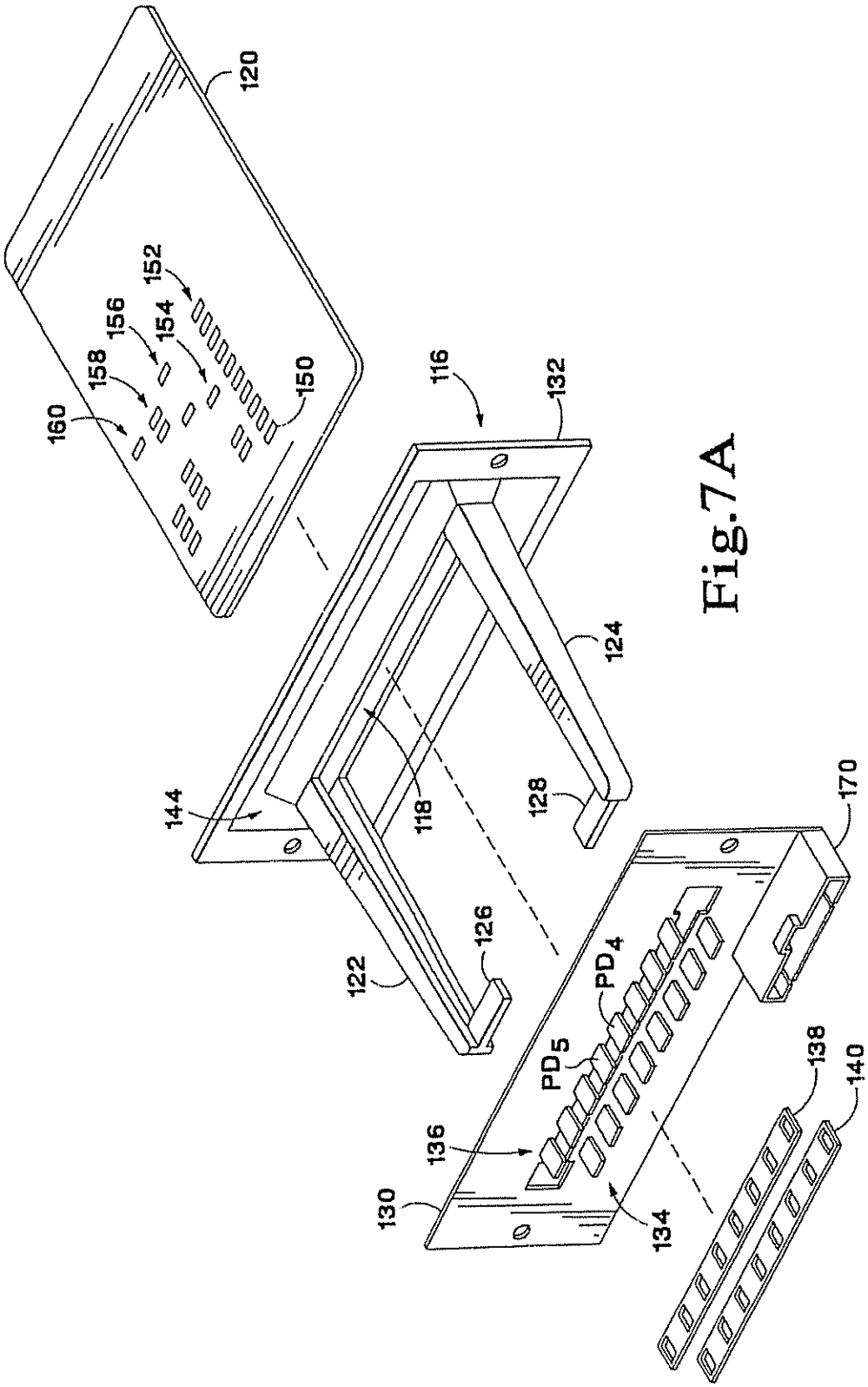

TO P.T. CONTROLLER
98 (FIG.2)
158
+5V
170
166
168
162
164
146
145
142
100
118
PD8
PD7
PD6
PD5
PD4
PD3
PD2
PD1
154
156
152
150
148
136
134
R
G

Fig.6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152
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158
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126
122
PD4
PD5
138
140
136
130
134

Fig.7A

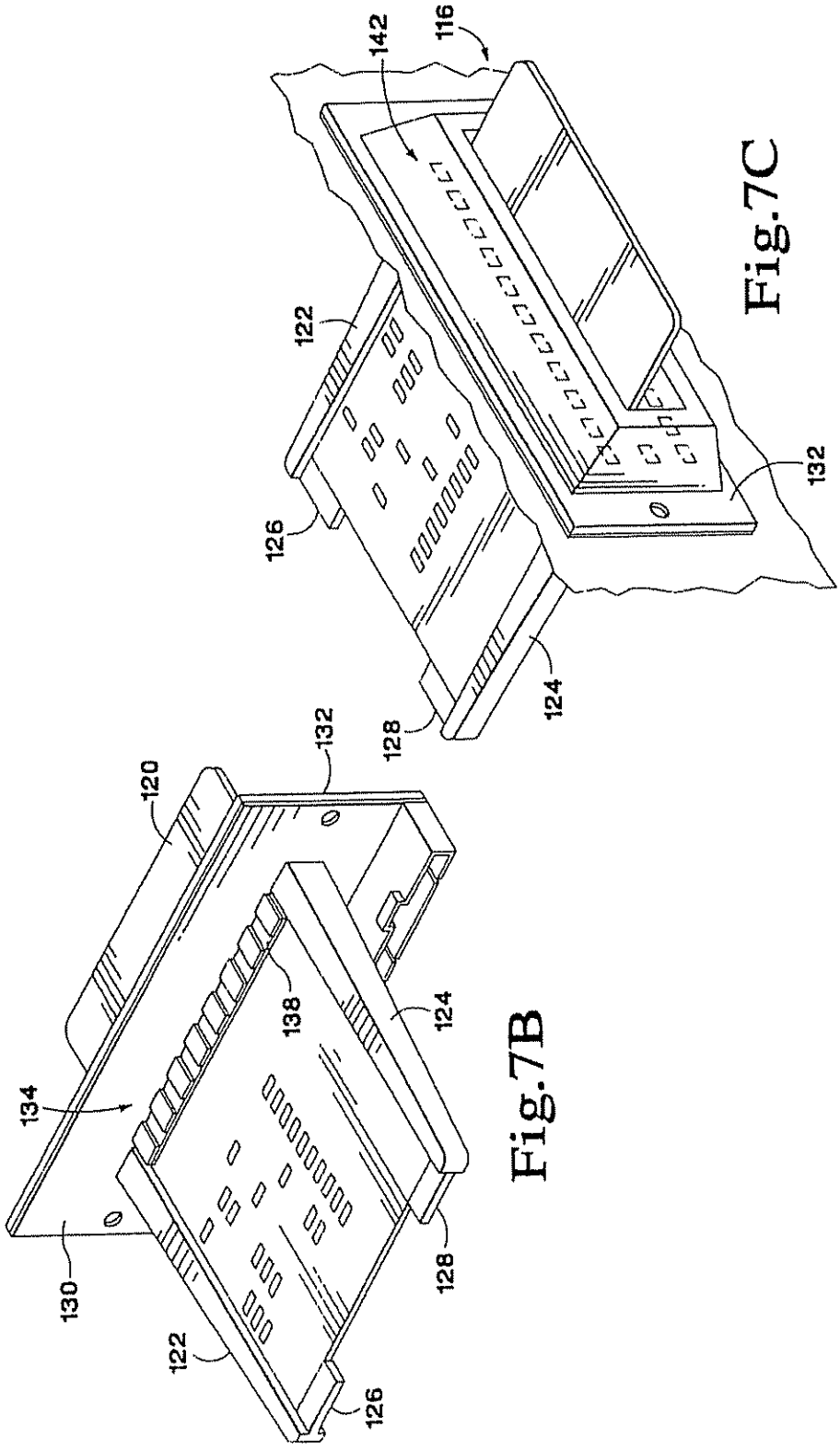


Fig.7C

Fig.7B

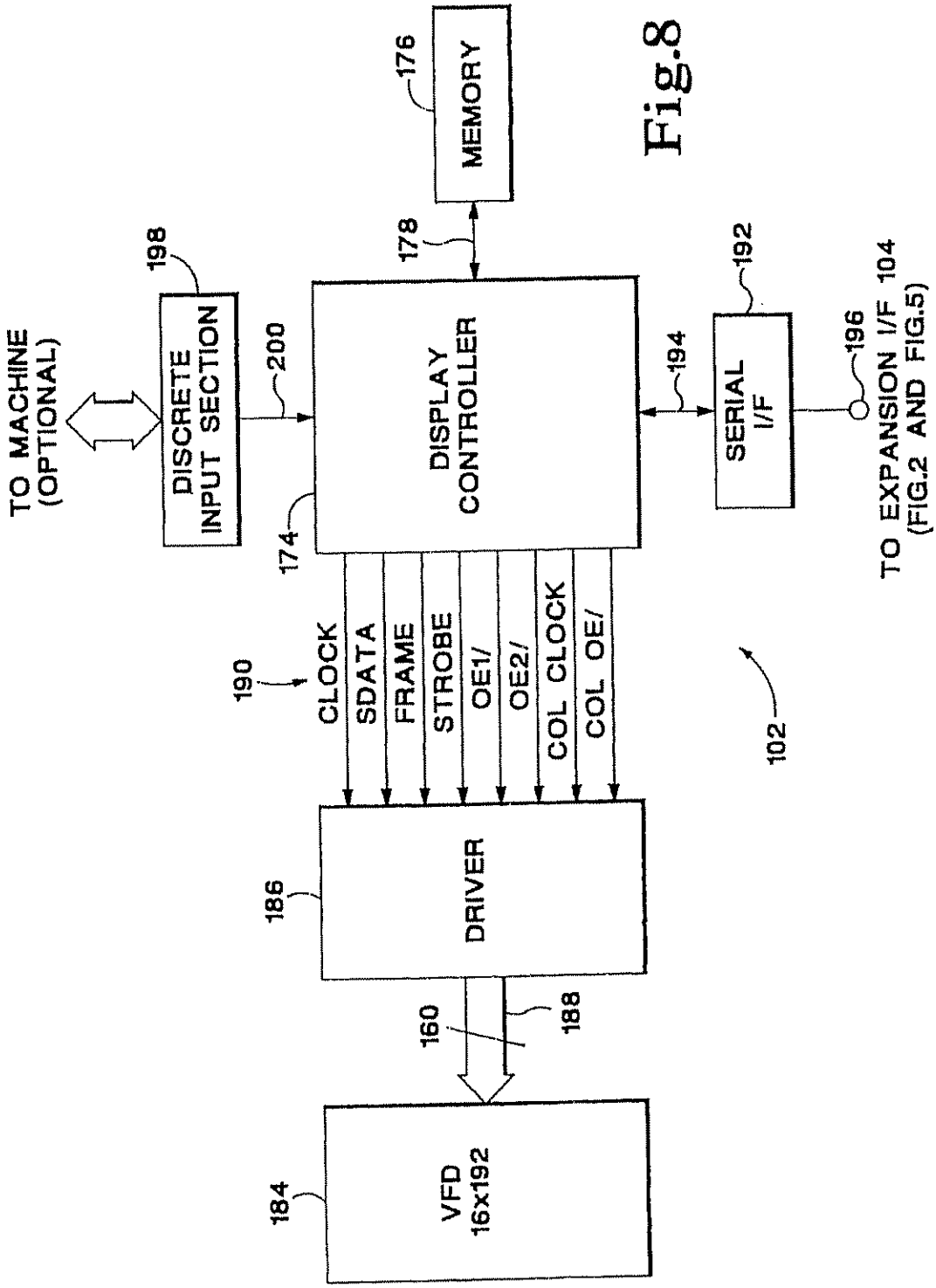

MEMORY
176
178
DISPLAY CONTROLLER
174
DISCRETE INPUT SECTION
198
200
TO MACHINE (OPTIONAL)
SERIAL I/F
192
194
196
TO EXPANSION I/F 104 (FIG.2 AND FIG.5)
CLOCK
SDATA
FRAME
STROBE
OE1/
OE2/
COL CLOCK
COL OE/
190
102
DRIVER
186
160
188
VFD 16x192
184

Fig.8

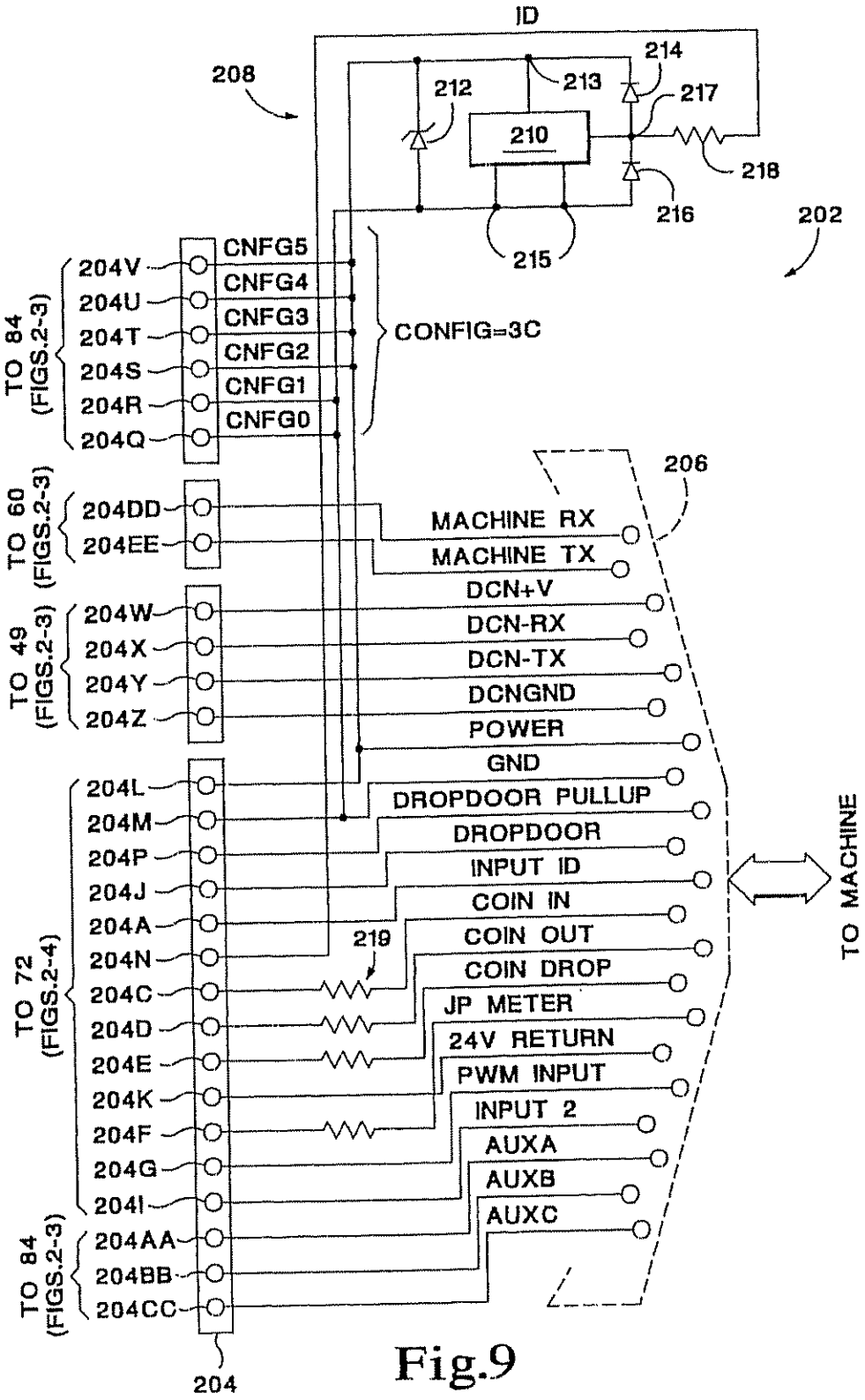

ID
208
212
213
214
217
210
218
216
215
202
CNFG5
CNFG4
CNFG3
CNFG2
CNFG1
CNFG0
CONFIG=3C
204V
204U
204T
204S
204R
204Q
TO 84 (FIGS.2-3)
206
TO 60 (FIGS.2-3)
204DD
204EE
MACHINE RX
MACHINE TX
TO 49 (FIGS.2-3)
204W
204X
204Y
204Z
DCN+V
DCN-RX
DCN-TX
DCNGND
POWER
GND
204L
204M
204P
204J
204A
204N
204C
204D
204E
204K
204F
204G
204I
TO 72 (FIGS.2-4)
DROPDOOR PULLUP
DROPDOOR
INPUT ID
COIN IN
COIN OUT
COIN DROP
JP METER
24V RETURN
PWM INPUT
INPUT 2
AUXA
AUXB
AUXC
219
TO MACHINE
204AA
204BB
204CC
TO 84 (FIGS.2-3)
204

Fig.9

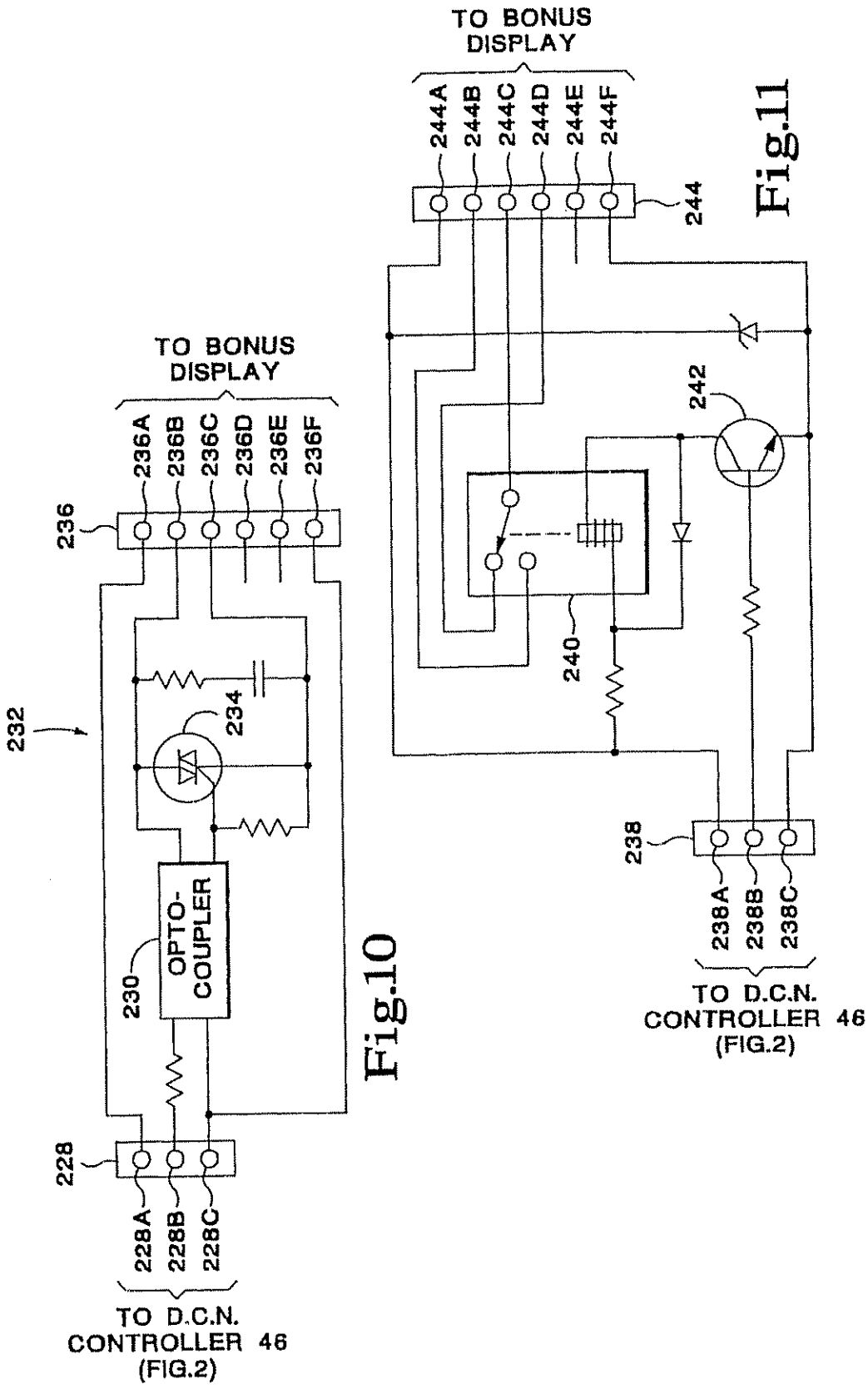

TO BONUS DISPLAY
244A
244B
244C
244D
244E
244F
244
242
240
238
238A
238B
238C
TO D.C.N. CONTROLLER 46 (FIG.2)
TO BONUS DISPLAY
236A
236B
236C
236D
236E
236F
236
232
234
230
OPTO-COUPLER
228
228A
228B
228C
TO D.C.N. CONTROLLER 46 (FIG.2)

Fig.11

Fig.10

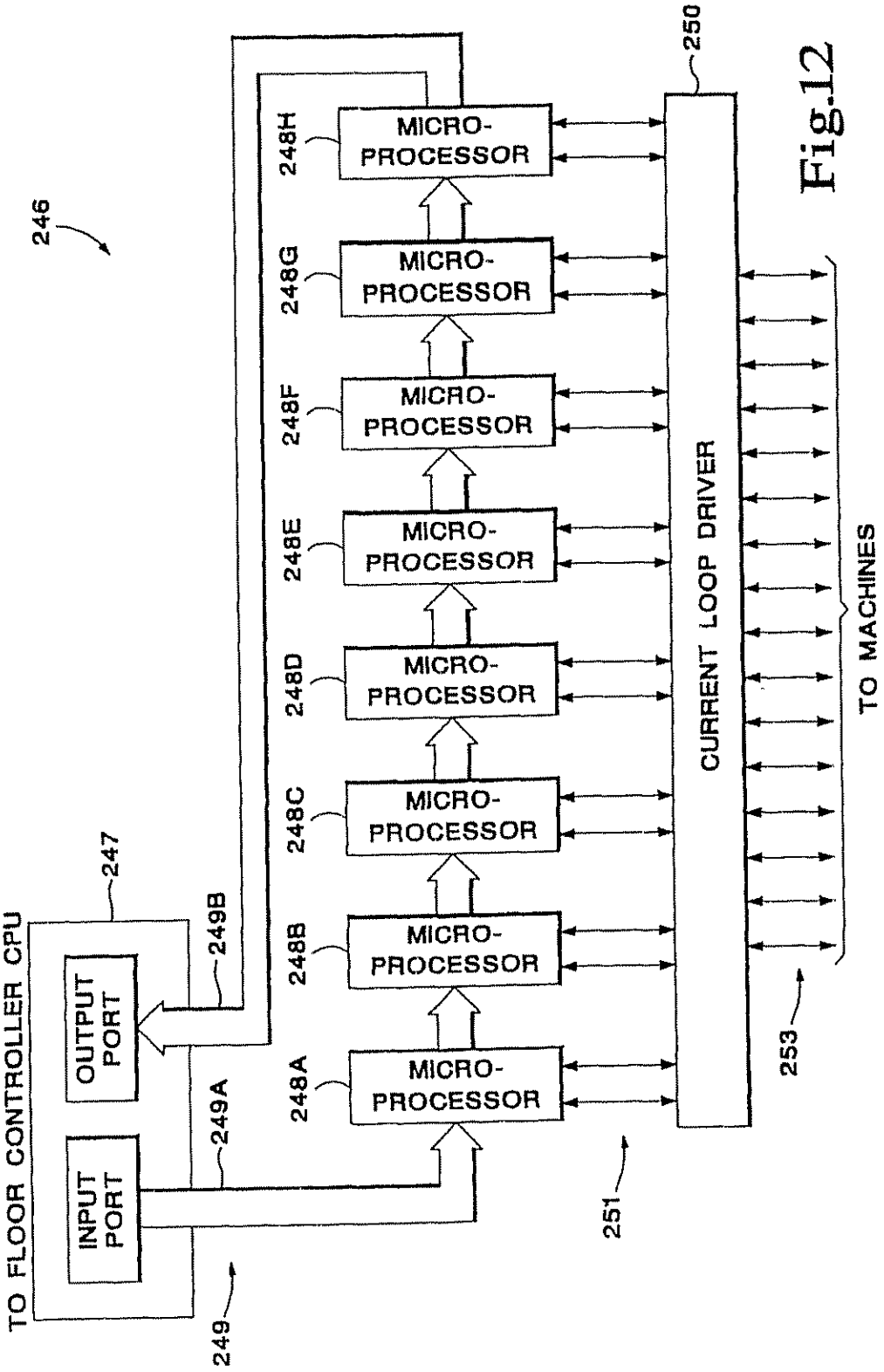

246
250
248H
MICRO-PROCESSOR
248G
MICRO-PROCESSOR
248F
MICRO-PROCESSOR
248E
MICRO-PROCESSOR
248D
MICRO-PROCESSOR
248C
MICRO-PROCESSOR
248B
MICRO-PROCESSOR
248A
MICRO-PROCESSOR
CURRENT LOOP DRIVER
TO MACHINES
253
251
247
249B
OUTPUT PORT
249A
INPUT PORT
249
TO FLOOR CONTROLLER CPU

Fig.12

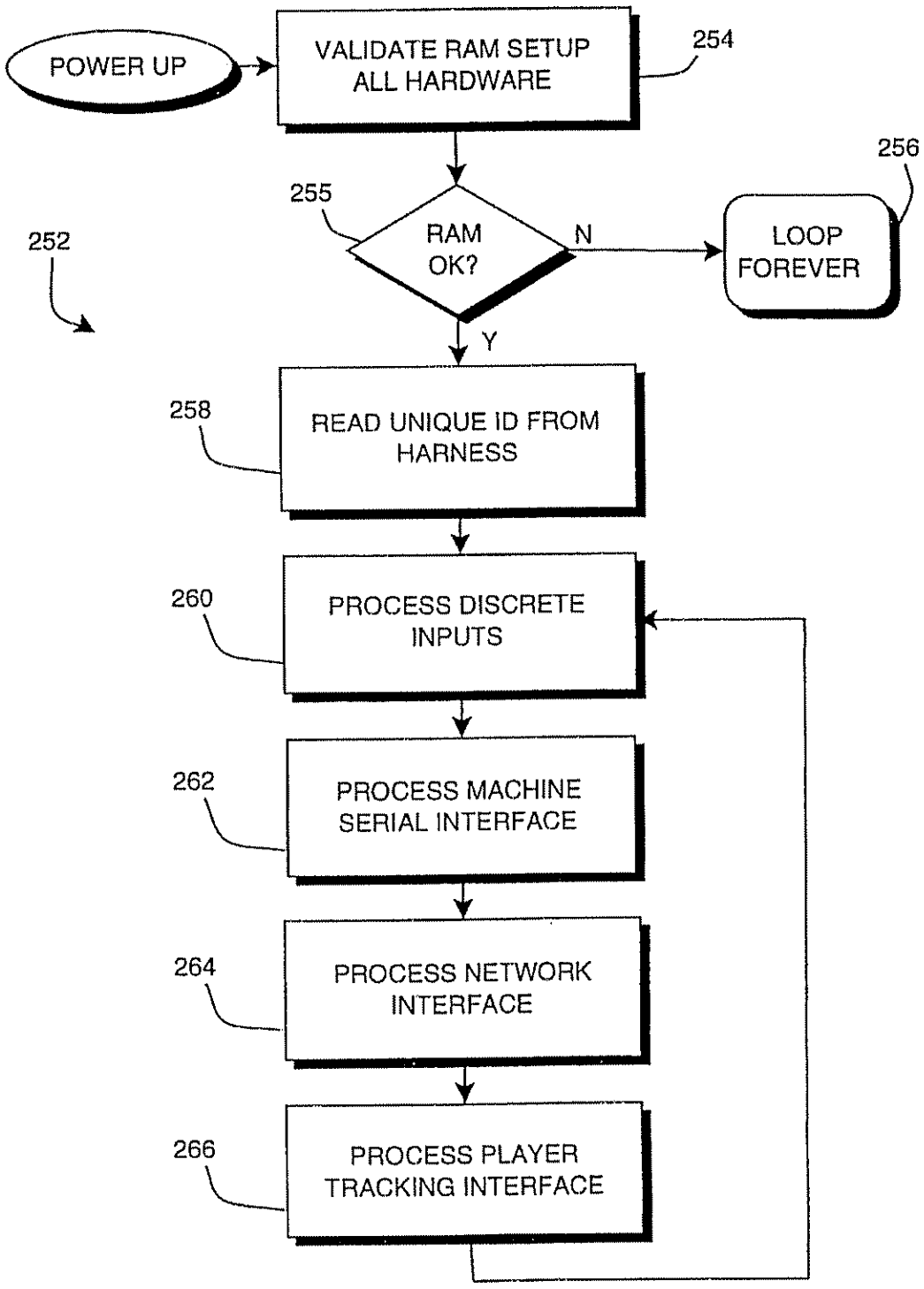

POWER UP
VALIDATE RAM SETUP
ALL HARDWARE
254
255
RAM
OK?
N
256
LOOP
FOREVER
252
Y
258
READ UNIQUE ID FROM
HARNESS
260
PROCESS DISCRETE
INPUTS
262
PROCESS MACHINE
SERIAL INTERFACE
264
PROCESS NETWORK
INTERFACE
266
PROCESS PLAYER
TRACKING INTERFACE

Fig.13

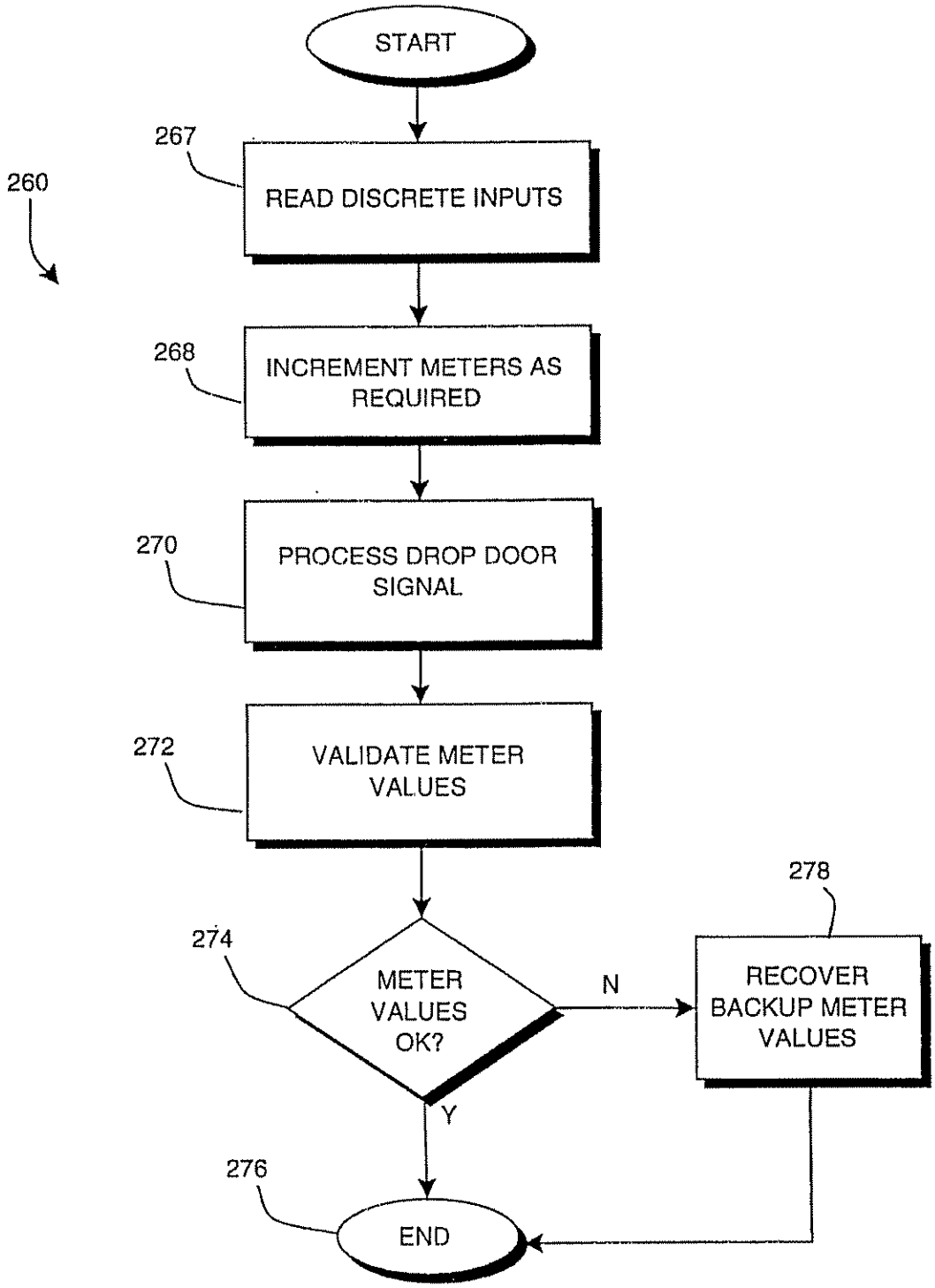

START
260
267
READ DISCRETE INPUTS
268
INCREMENT METERS AS REQUIRED
270
PROCESS DROP DOOR SIGNAL
272
VALIDATE METER VALUES
274
METER VALUES OK?
N
278
RECOVER BACKUP METER VALUES
Y
276
END

Fig.14

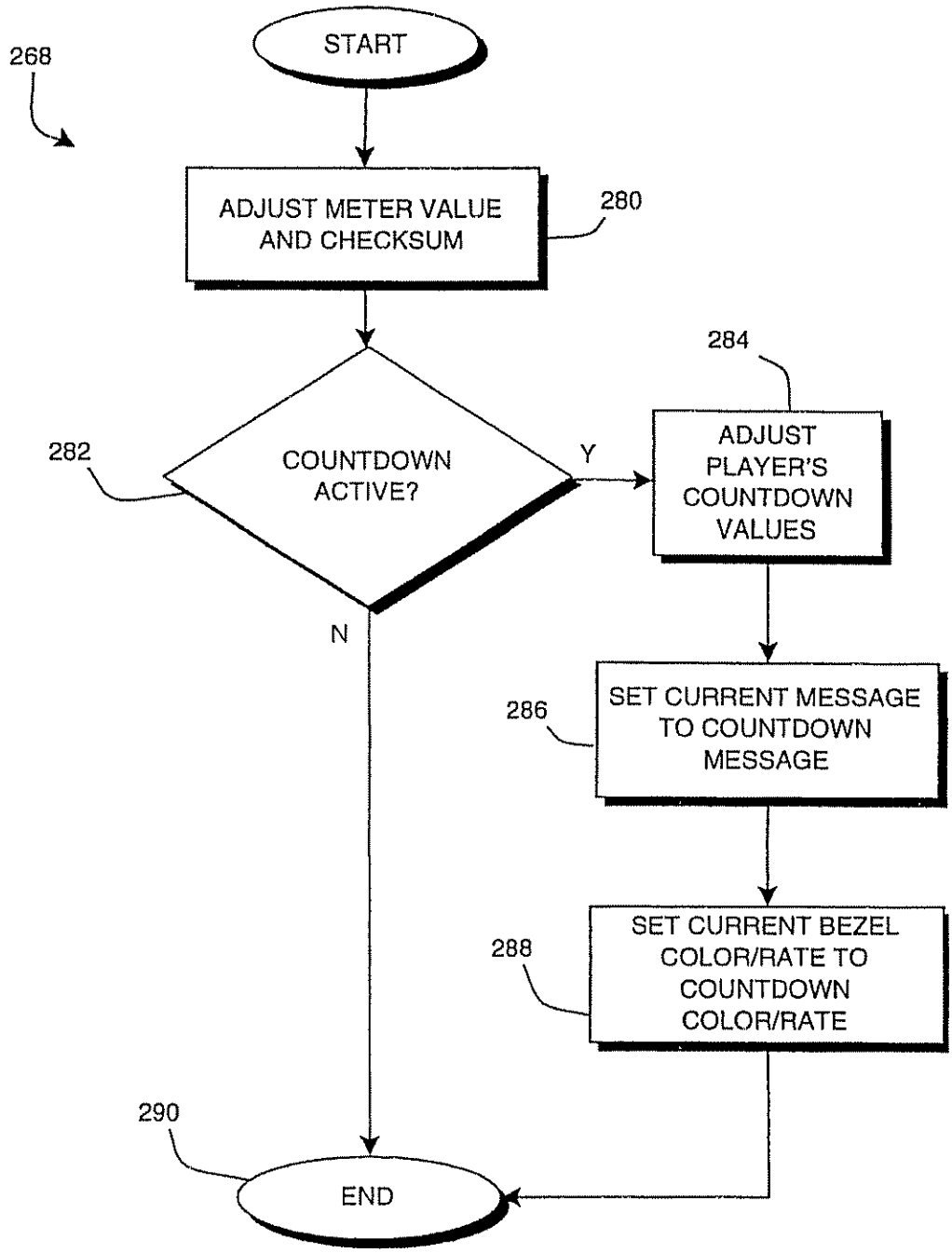

268
START
ADJUST METER VALUE AND CHECKSUM
280
284
282
COUNTDOWN ACTIVE?
Y
ADJUST PLAYER'S COUNTDOWN VALUES
N
286
SET CURRENT MESSAGE TO COUNTDOWN MESSAGE
288
SET CURRENT BEZEL COLOR/RATE TO COUNTDOWN COLOR/RATE
290
END

Fig.15

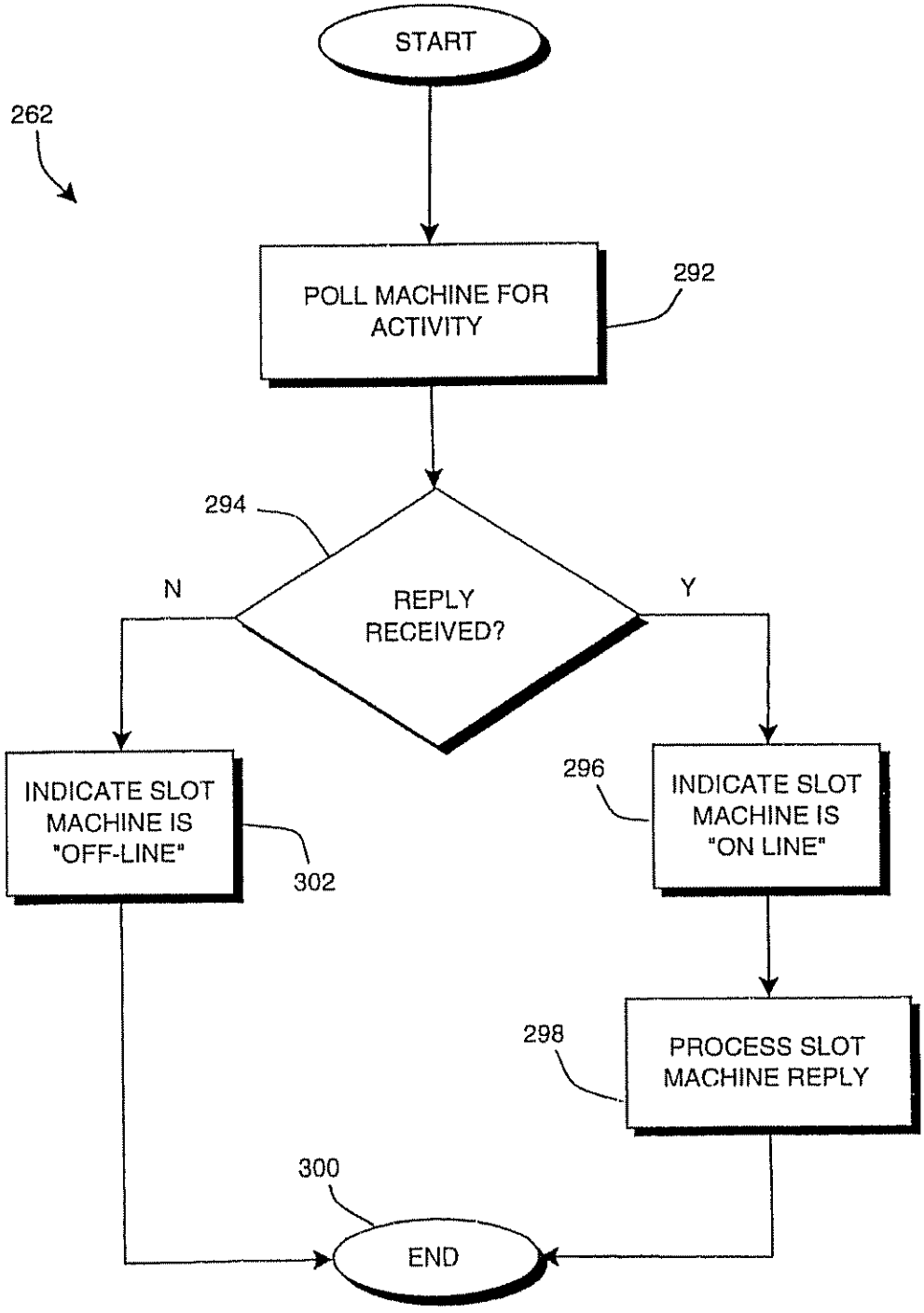

START
262
POLL MACHINE FOR ACTIVITY
292
294
REPLY RECEIVED?
N
Y
INDICATE SLOT MACHINE IS "OFF-LINE"
302
296
INDICATE SLOT MACHINE IS "ON LINE"
298
PROCESS SLOT MACHINE REPLY
300
END

Fig.16

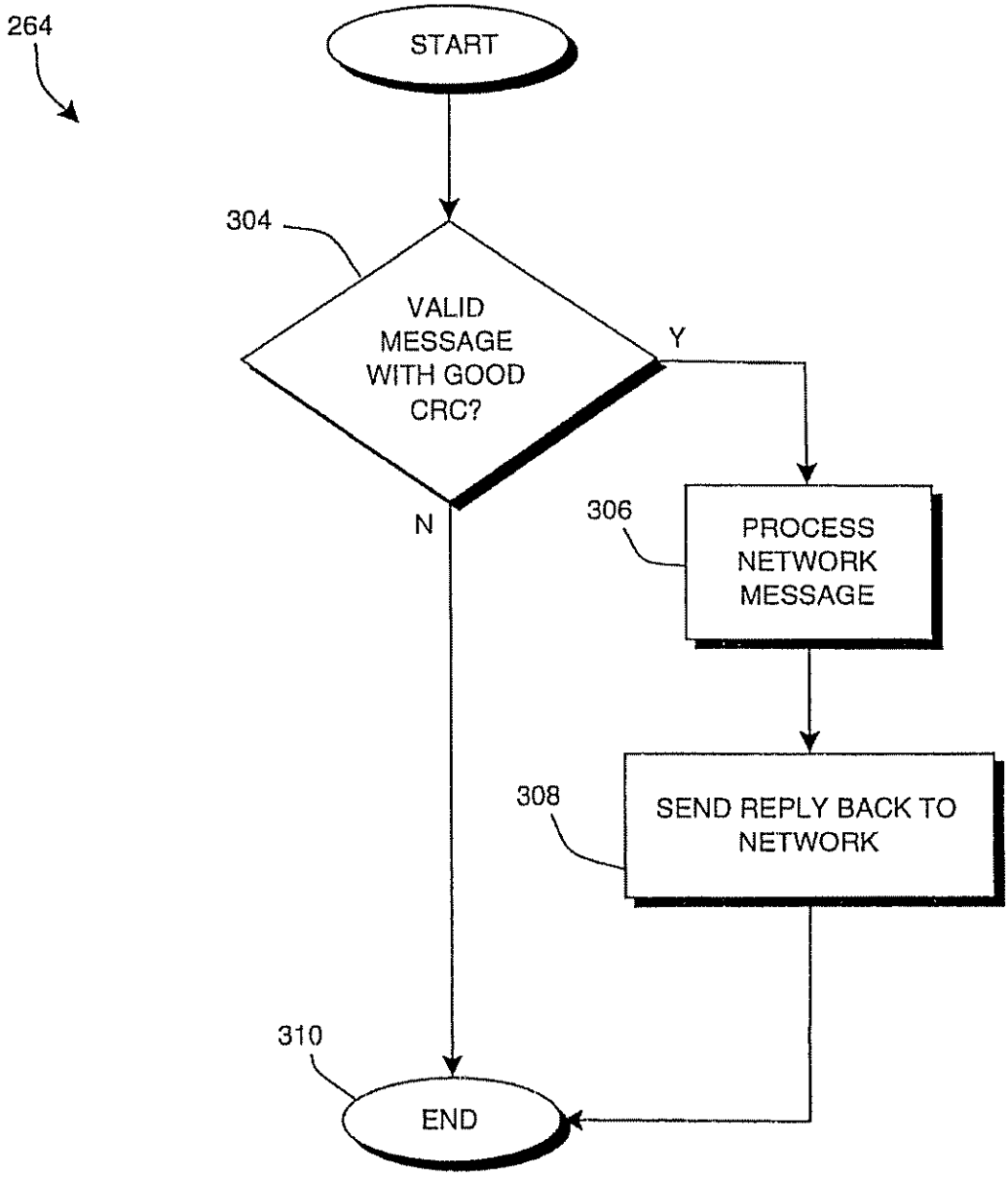

264
START
304
VALID MESSAGE WITH GOOD CRC?
Y
N
306
PROCESS NETWORK MESSAGE
308
SEND REPLY BACK TO NETWORK
310
END

Fig.17

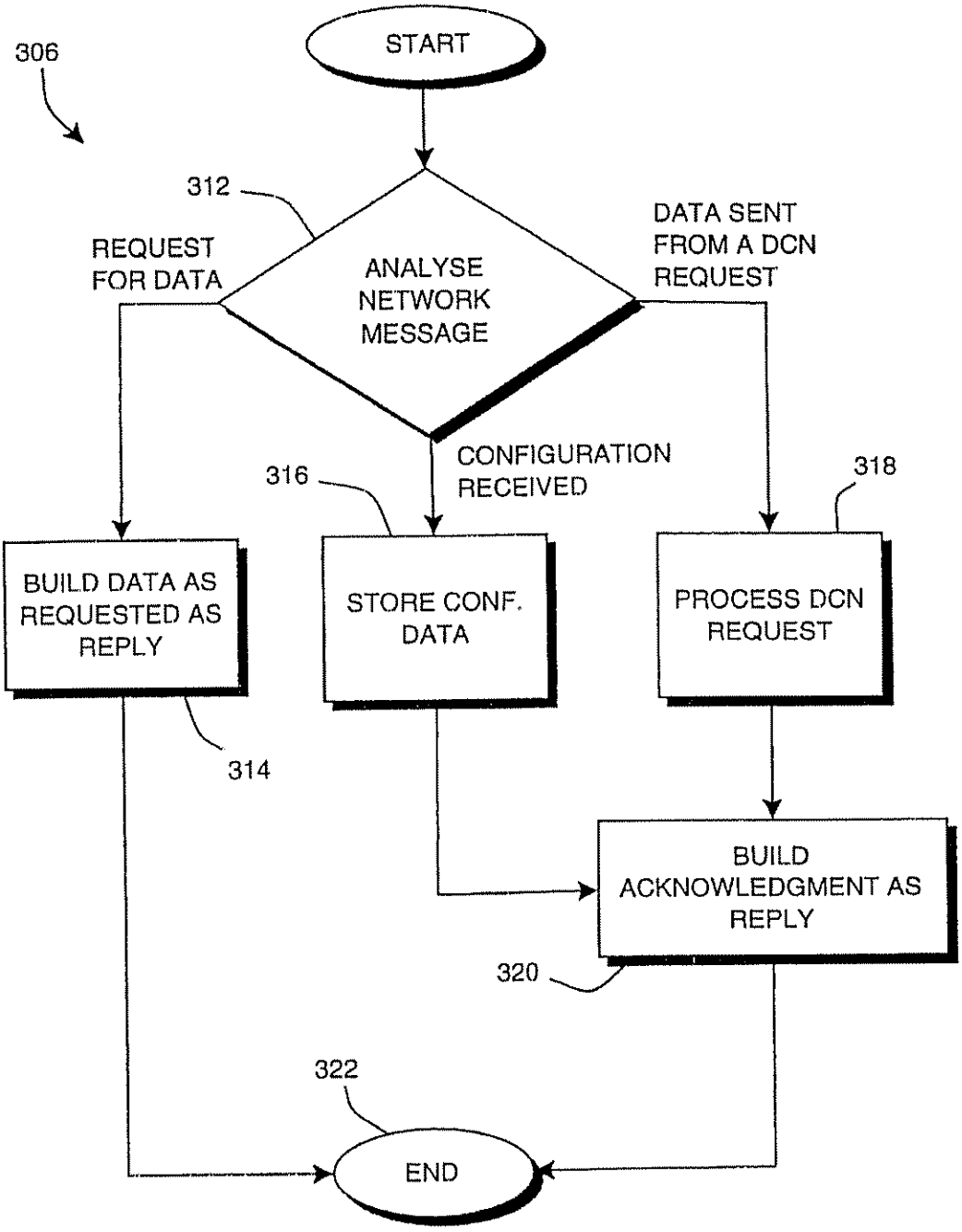

306
START
312
ANALYSE NETWORK MESSAGE
REQUEST FOR DATA
DATA SENT FROM A DCN REQUEST
CONFIGURATION RECEIVED
316
318
BUILD DATA AS REQUESTED AS REPLY
STORE CONF. DATA
PROCESS DCN REQUEST
314
BUILD ACKNOWLEDGMENT AS REPLY
320
322
END

Fig.18

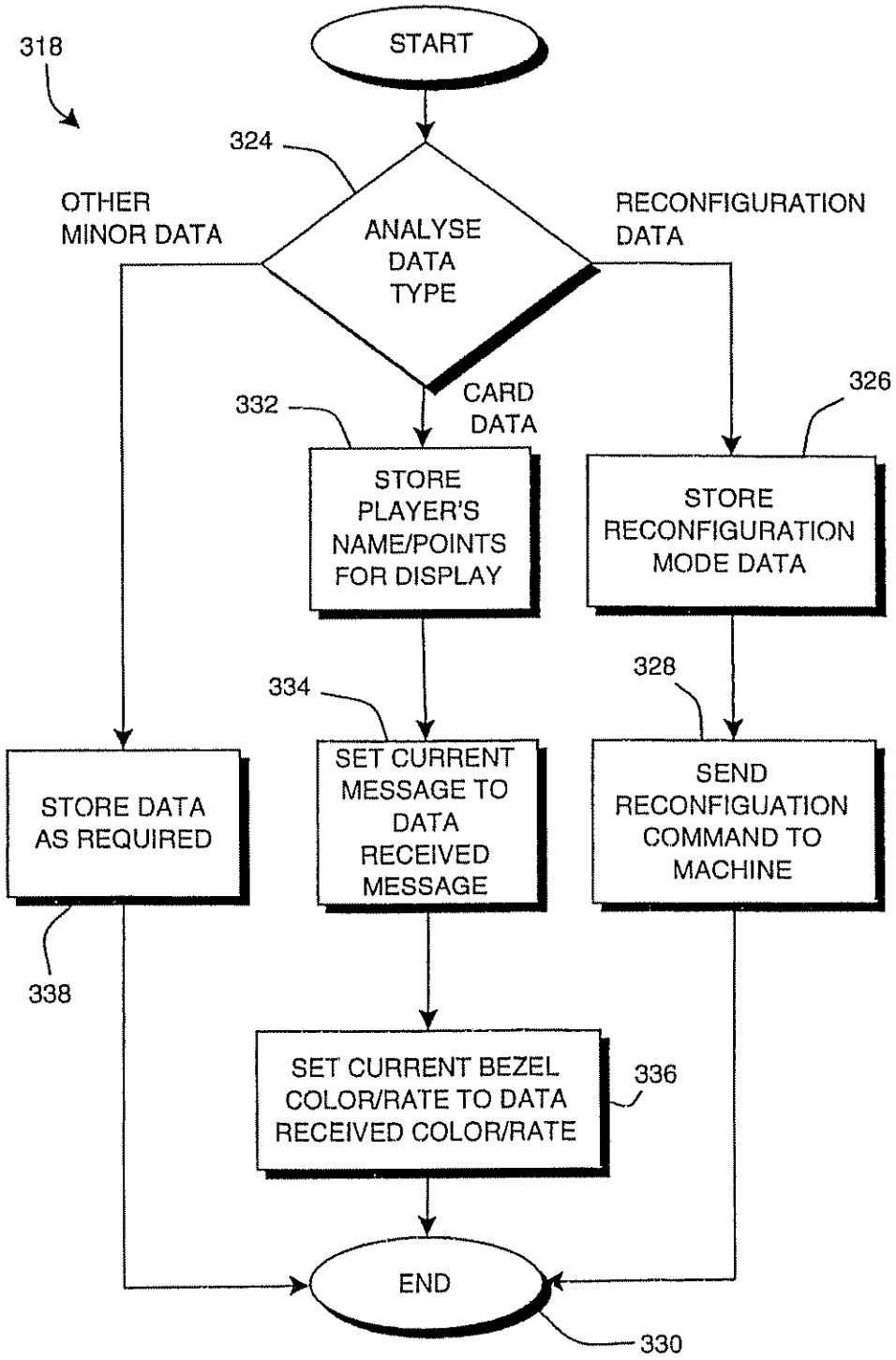

318
START
324
ANALYSE DATA TYPE
OTHER MINOR DATA
RECONFIGURATION DATA
CARD DATA
332
326
STORE PLAYER'S NAME/POINTS FOR DISPLAY
STORE RECONFIGURATION MODE DATA
334
328
STORE DATA AS REQUIRED
SET CURRENT MESSAGE TO DATA RECEIVED MESSAGE
SEND RECONFIGUATION COMMAND TO MACHINE
338
SET CURRENT BEZEL COLOR/RATE TO DATA RECEIVED COLOR/RATE
336
END
330

Fig.19

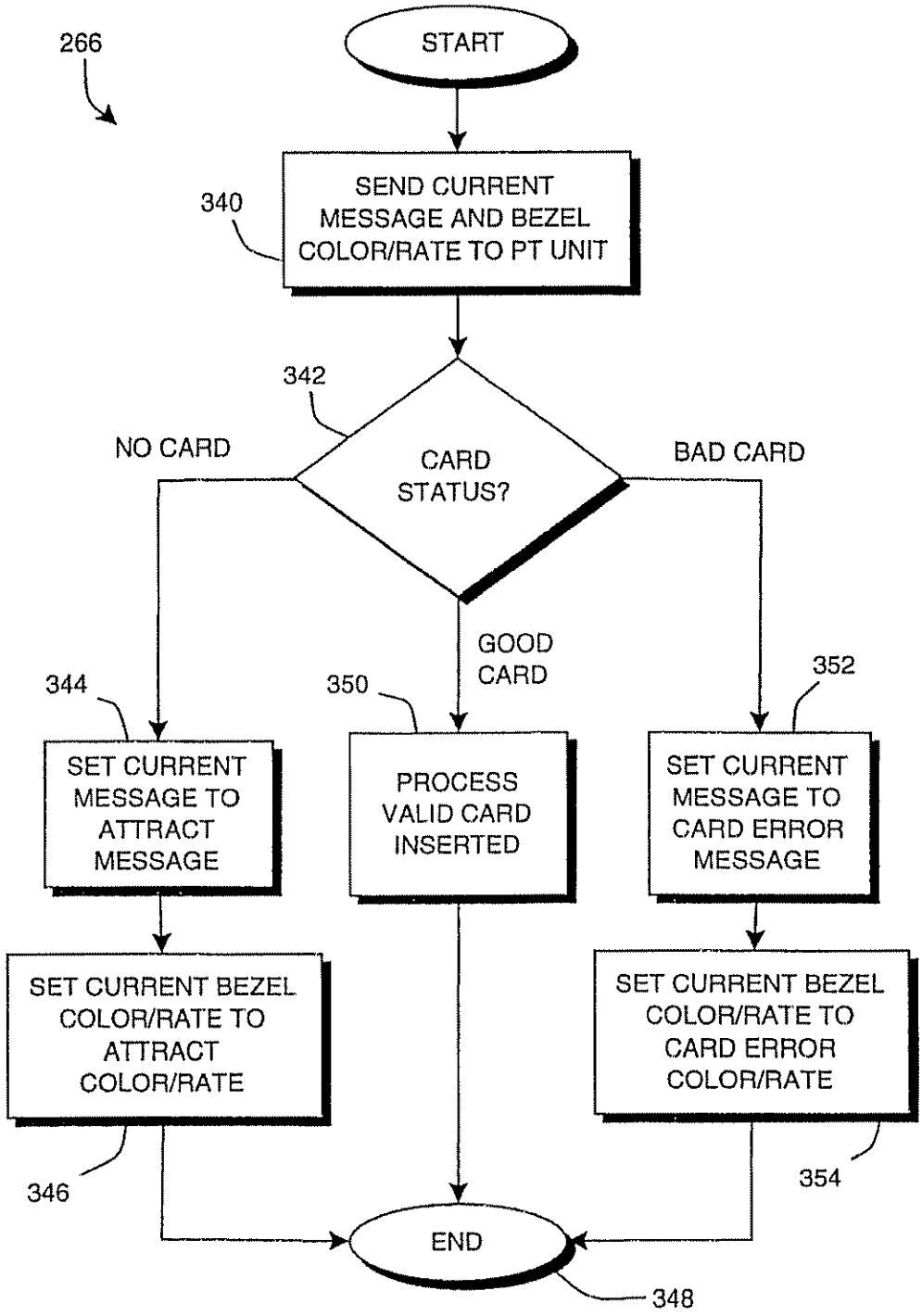

266
START
340
SEND CURRENT MESSAGE AND BEZEL COLOR/RATE TO PT UNIT
342
CARD STATUS?
NO CARD
BAD CARD
GOOD CARD
344
SET CURRENT MESSAGE TO ATTRACT MESSAGE
350
PROCESS VALID CARD INSERTED
352
SET CURRENT MESSAGE TO CARD ERROR MESSAGE
SET CURRENT BEZEL COLOR/RATE TO ATTRACT COLOR/RATE
SET CURRENT BEZEL COLOR/RATE TO CARD ERROR COLOR/RATE
346
354
END
348

Fig.20

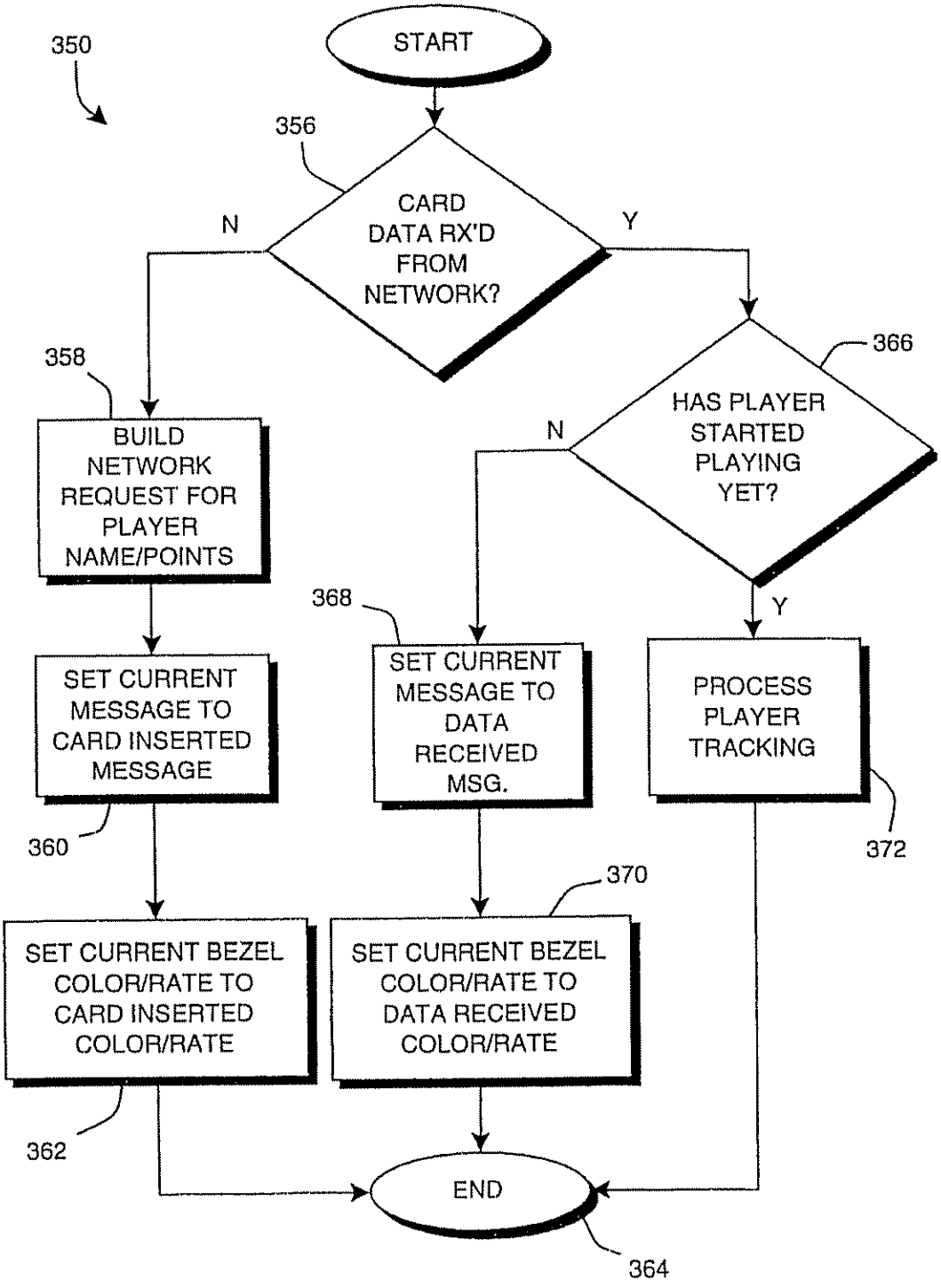

350
START
356
CARD DATA RX'D FROM NETWORK?
N
Y
358
BUILD NETWORK REQUEST FOR PLAYER NAME/POINTS
366
HAS PLAYER STARTED PLAYING YET?
N
Y
368
SET CURRENT MESSAGE TO CARD INSERTED MESSAGE
SET CURRENT MESSAGE TO DATA RECEIVED MSG.
PROCESS PLAYER TRACKING
360
372
370
SET CURRENT BEZEL COLOR/RATE TO CARD INSERTED COLOR/RATE
SET CURRENT BEZEL COLOR/RATE TO DATA RECEIVED COLOR/RATE
362
END
364

Fig.21

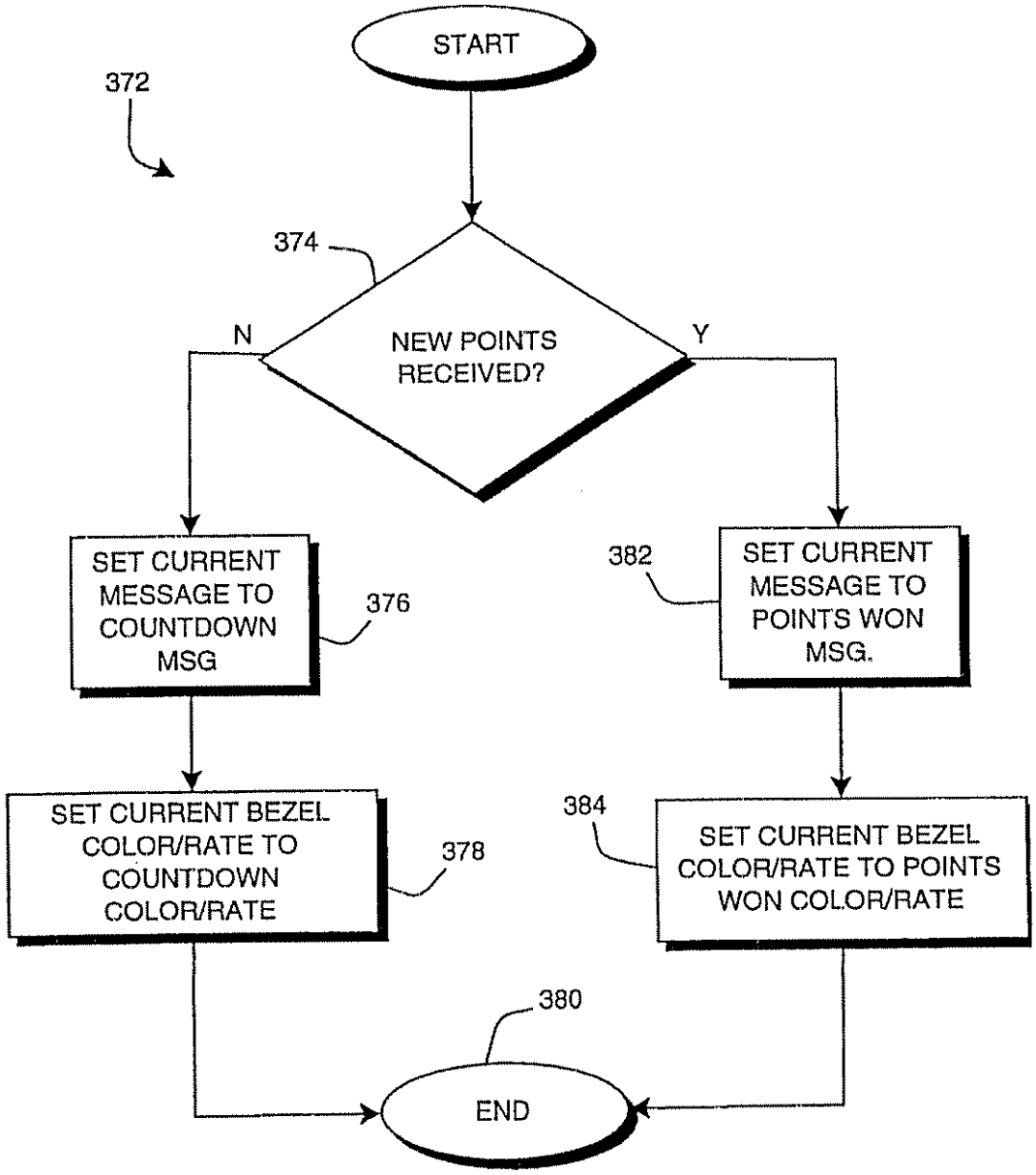

START
372
374
NEW POINTS RECEIVED?
N
Y
SET CURRENT MESSAGE TO COUNTDOWN MSG
376
382
SET CURRENT MESSAGE TO POINTS WON MSG.
SET CURRENT BEZEL COLOR/RATE TO COUNTDOWN COLOR/RATE
378
384
SET CURRENT BEZEL COLOR/RATE TO POINTS WON COLOR/RATE
380
END

Fig.22

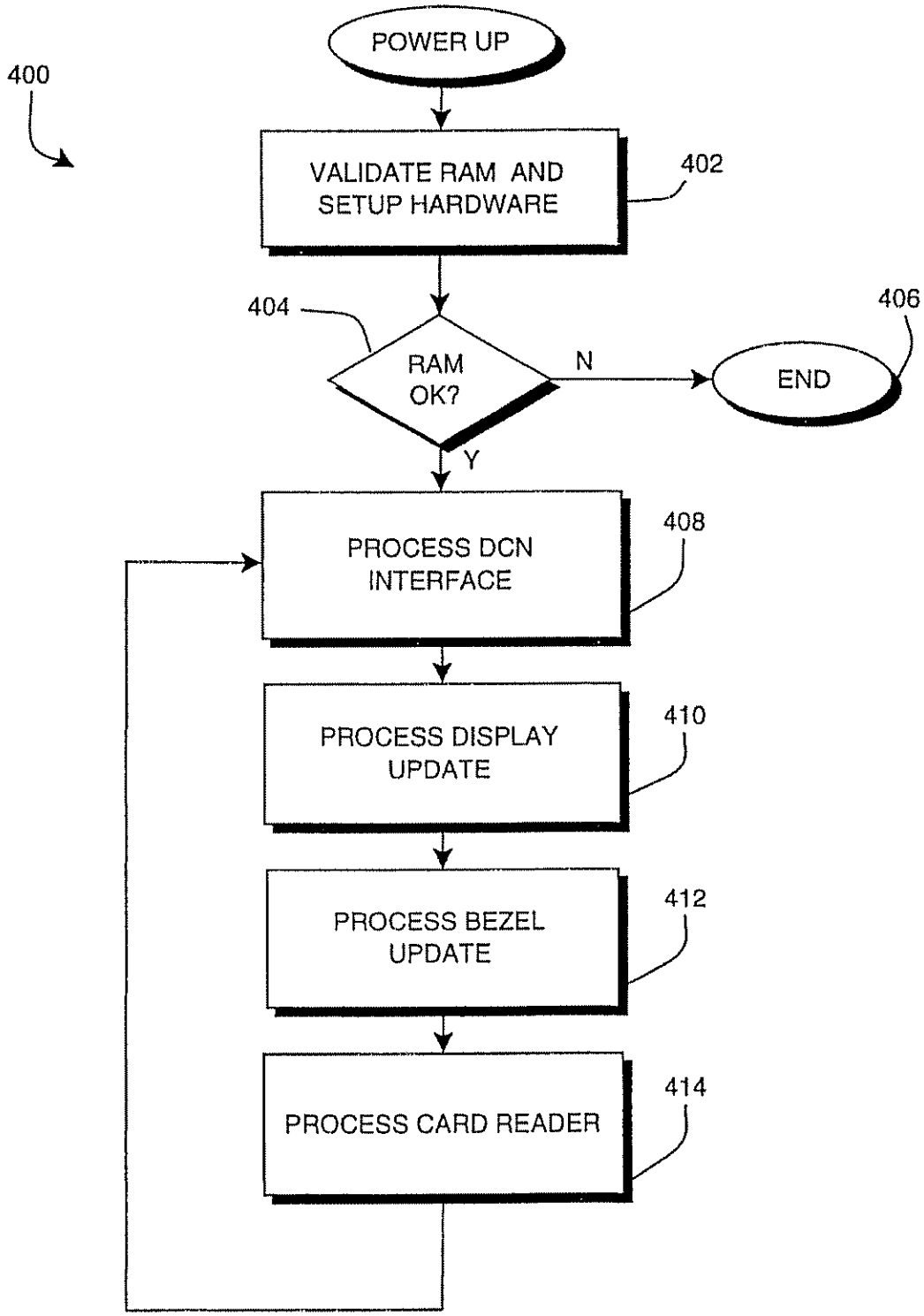

400
POWER UP
VALIDATE RAM AND SETUP HARDWARE
402
404
RAM OK?
N
406
END
Y
PROCESS DCN INTERFACE
408
PROCESS DISPLAY UPDATE
410
PROCESS BEZEL UPDATE
412
PROCESS CARD READER
414

Fig.23

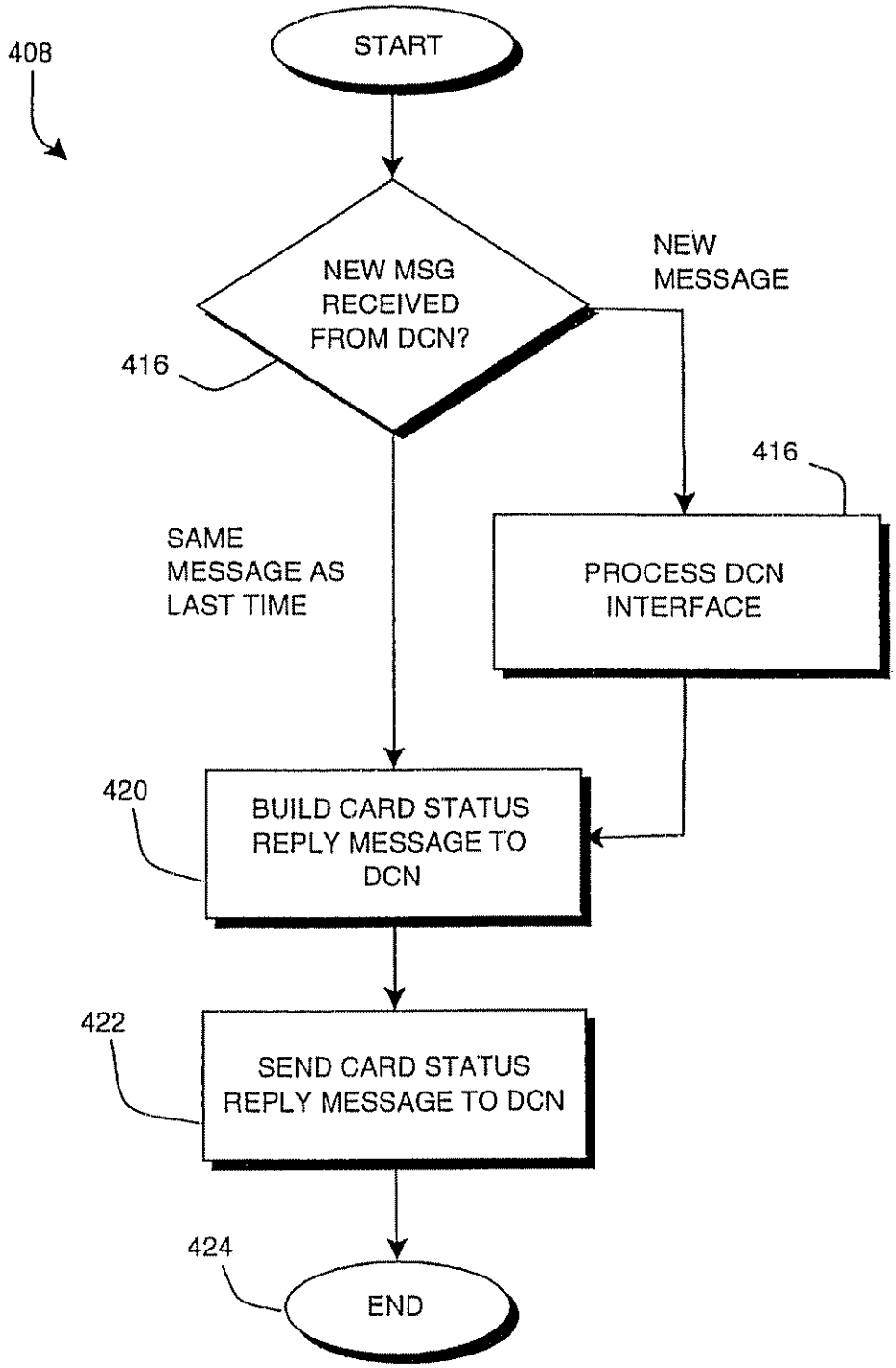

408
START
NEW MSG RECEIVED FROM DCN?
416
NEW MESSAGE
416
SAME MESSAGE AS LAST TIME
PROCESS DCN INTERFACE
420
BUILD CARD STATUS REPLY MESSAGE TO DCN
422
SEND CARD STATUS REPLY MESSAGE TO DCN
424
END

Fig.24

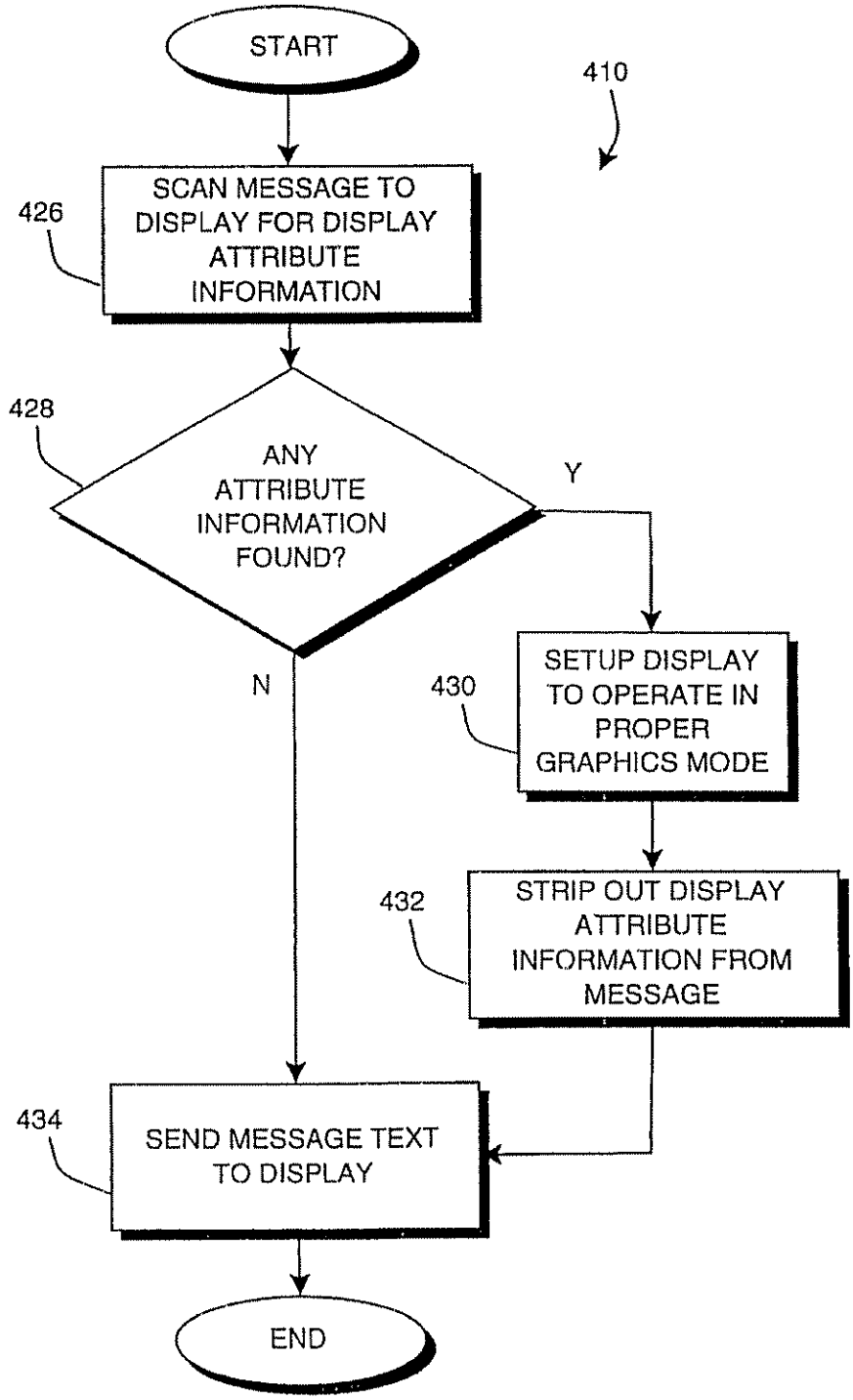

START
410
SCAN MESSAGE TO DISPLAY FOR DISPLAY ATTRIBUTE INFORMATION
426
ANY ATTRIBUTE INFORMATION FOUND?
428
Y
N
SETUP DISPLAY TO OPERATE IN PROPER GRAPHICS MODE
430
STRIP OUT DISPLAY ATTRIBUTE INFORMATION FROM MESSAGE
432
SEND MESSAGE TEXT TO DISPLAY
434
END

Fig.25

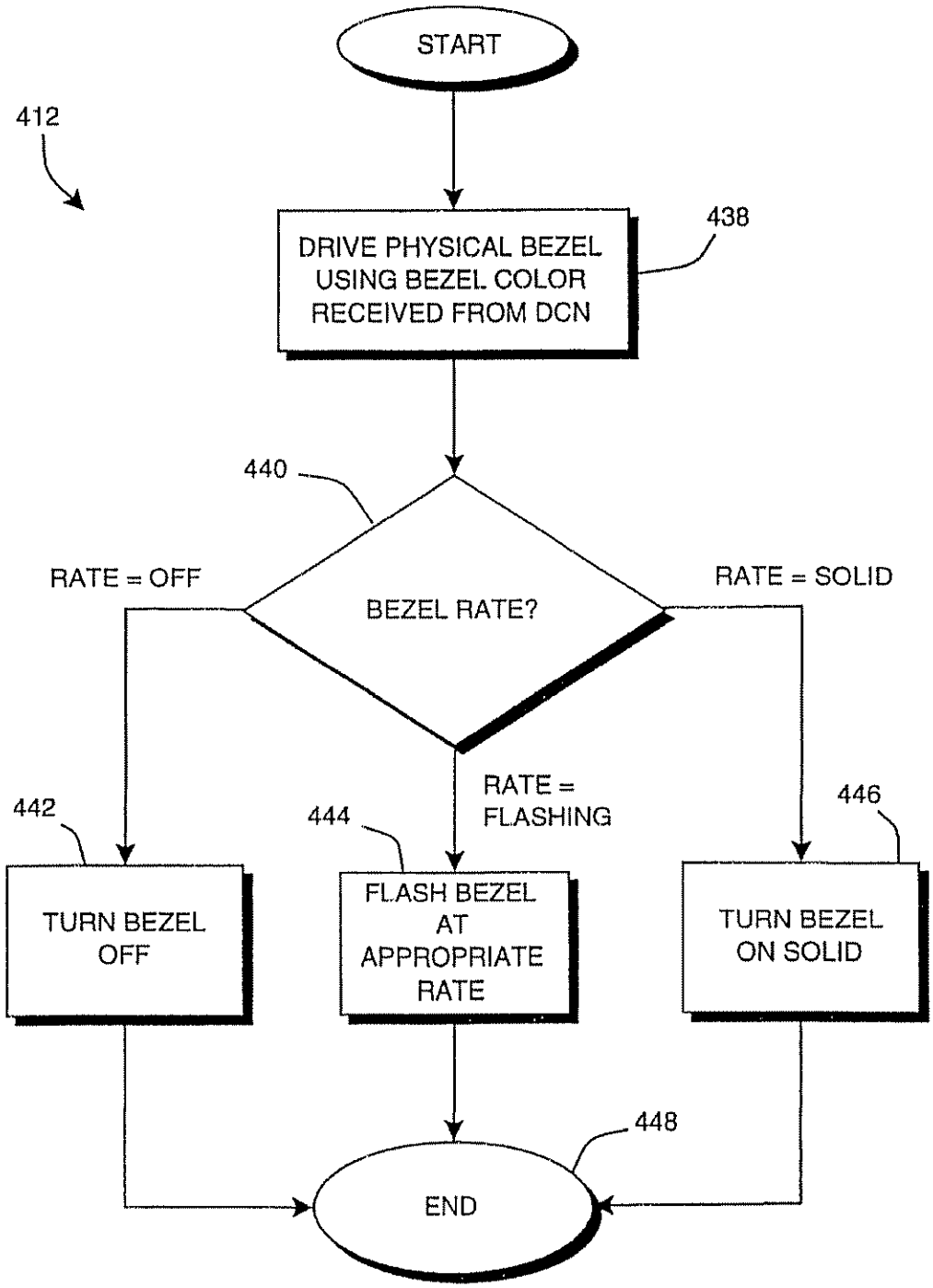

START
412
DRIVE PHYSICAL BEZEL USING BEZEL COLOR RECEIVED FROM DCN
438
440
BEZEL RATE?
RATE = OFF
RATE = SOLID
RATE = FLASHING
442
444
446
TURN BEZEL OFF
FLASH BEZEL AT APPROPRIATE RATE
TURN BEZEL ON SOLID
448
END

Fig.26

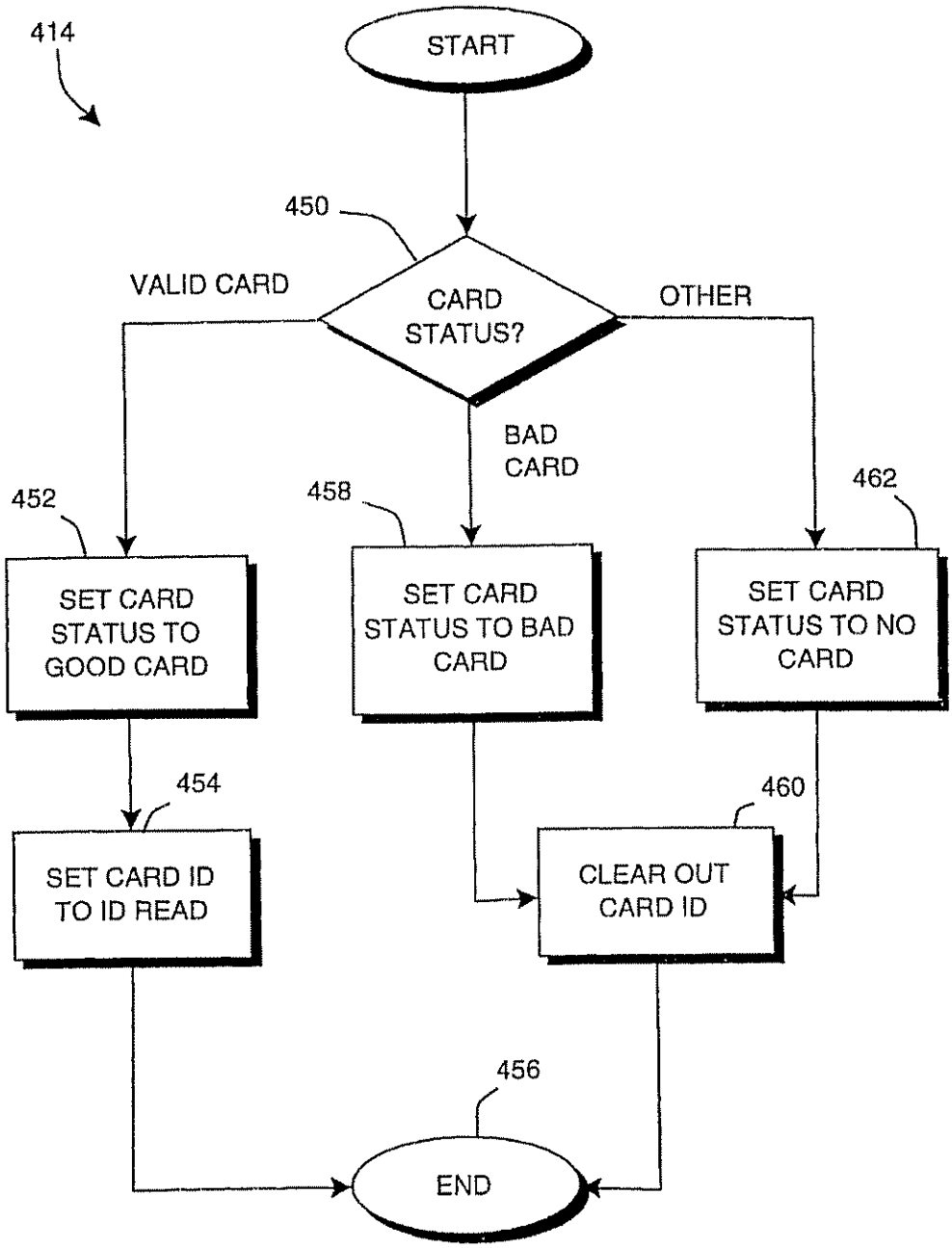

414
START
450
CARD STATUS?
VALID CARD
OTHER
BAD CARD
452
458
462
SET CARD STATUS TO GOOD CARD
SET CARD STATUS TO BAD CARD
SET CARD STATUS TO NO CARD
454
460
SET CARD ID TO ID READ
CLEAR OUT CARD ID
456
END

Fig.27

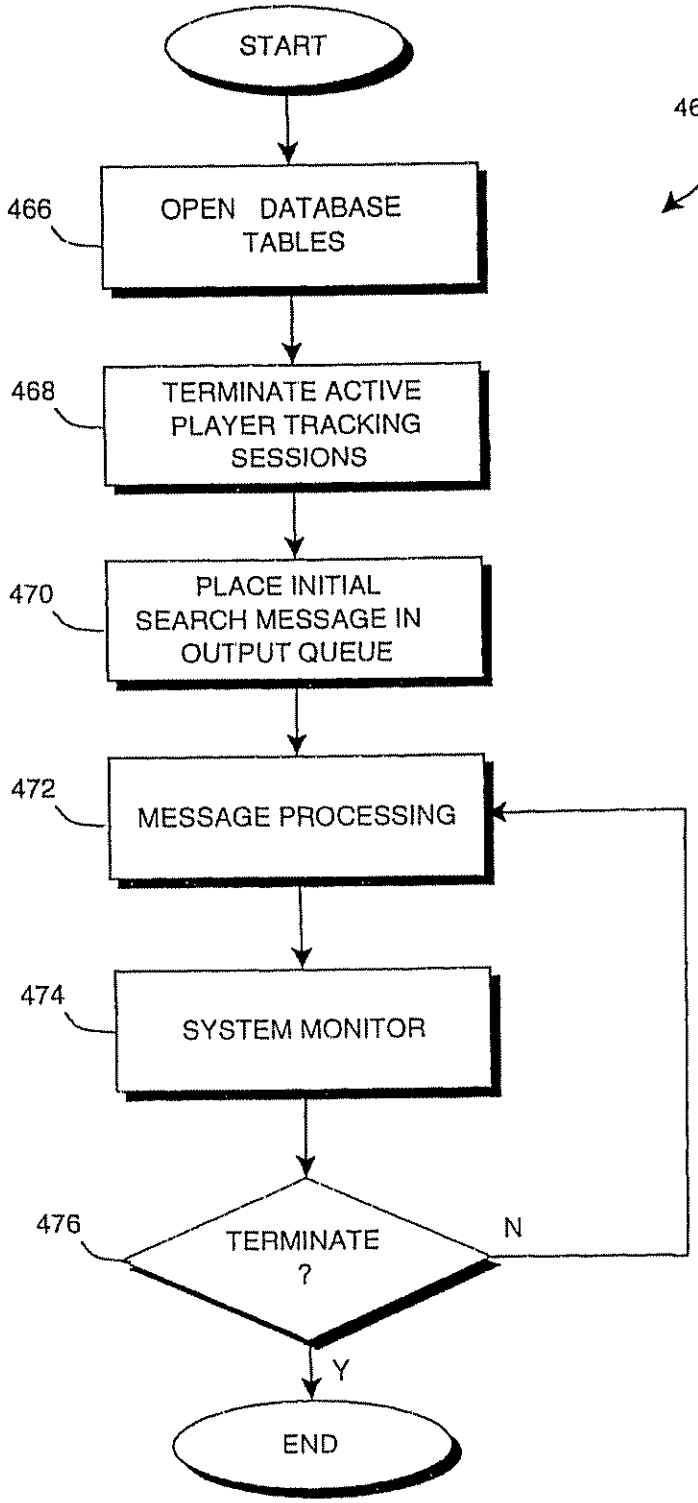

START
464
466
OPEN DATABASE TABLES
468
TERMINATE ACTIVE PLAYER TRACKING SESSIONS
470
PLACE INITIAL SEARCH MESSAGE IN OUTPUT QUEUE
472
MESSAGE PROCESSING
474
SYSTEM MONITOR
476
TERMINATE ?
N
Y
END

Fig.28

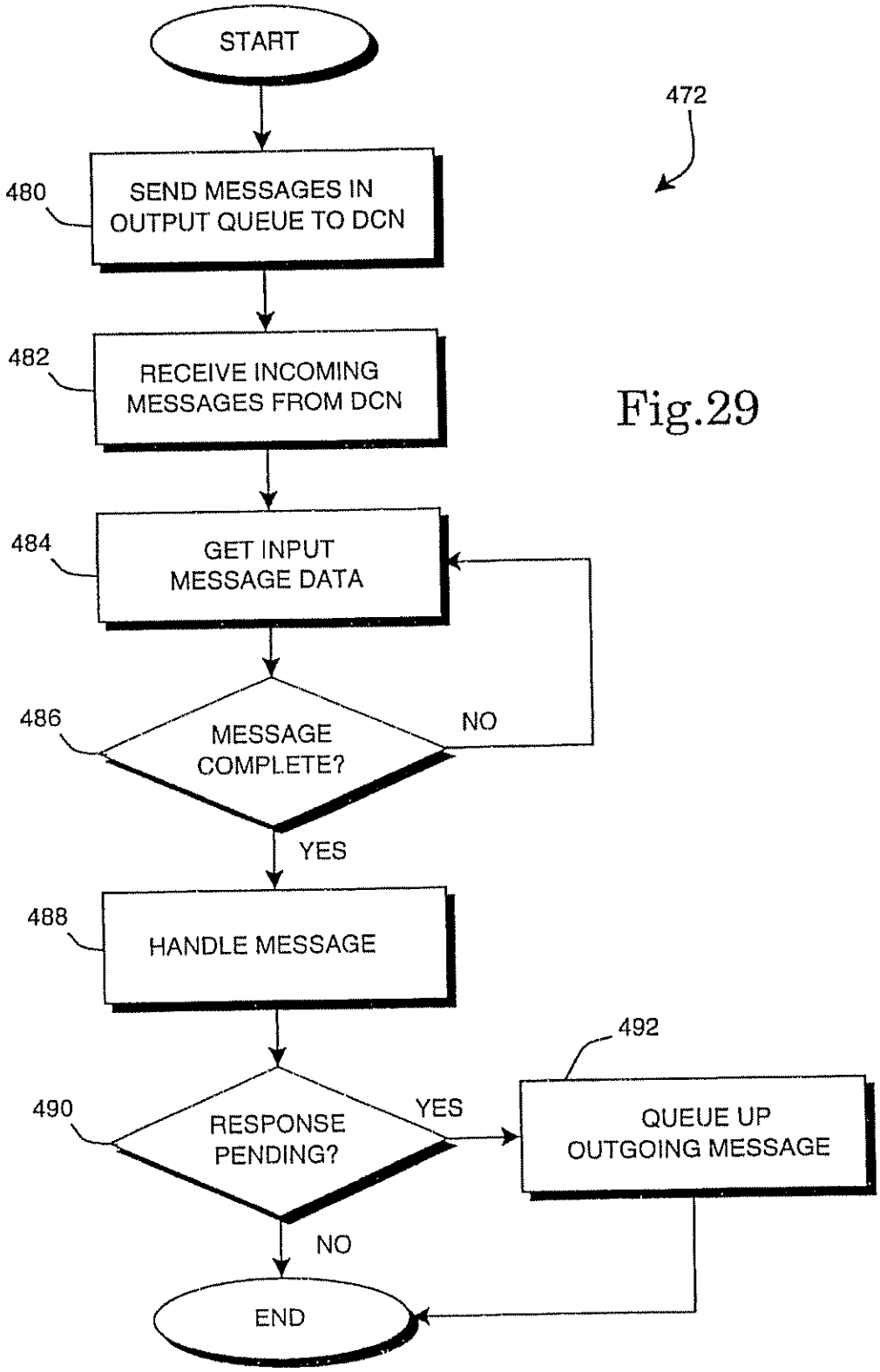
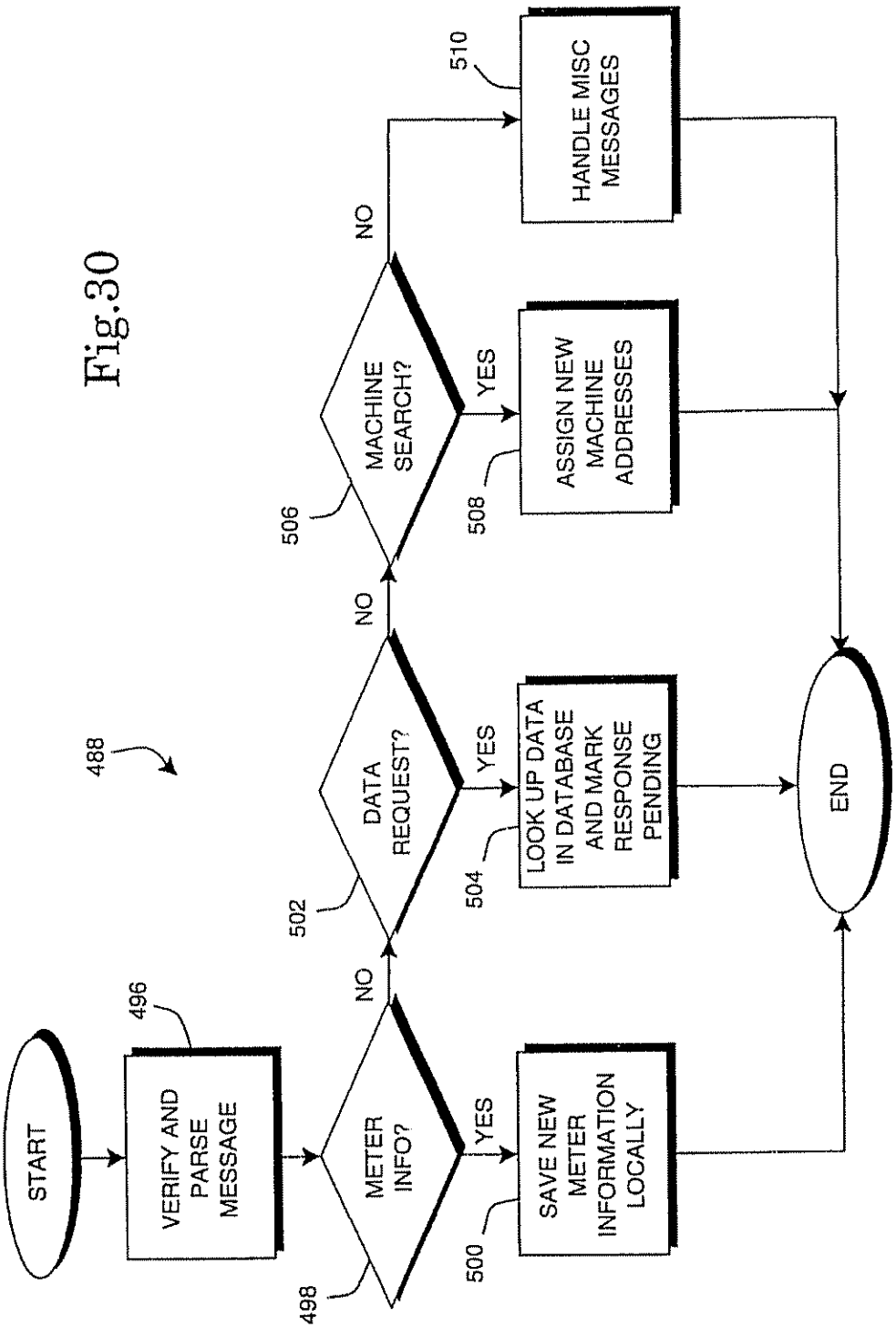

START
472
480
SEND MESSAGES IN OUTPUT QUEUE TO DCN
482
RECEIVE INCOMING MESSAGES FROM DCN
484
GET INPUT MESSAGE DATA
486
MESSAGE COMPLETE?
NO
YES
488
HANDLE MESSAGE
490
RESPONSE PENDING?
YES
492
QUEUE UP OUTGOING MESSAGE
NO
END

Fig.29

Fig.30


488
START
VERIFY AND PARSE MESSAGE
496
METER INFO?
498
NO
YES
SAVE NEW METER INFORMATION LOCALLY
500
DATA REQUEST?
502
NO
YES
LOOK UP DATA IN DATABASE AND MARK RESPONSE PENDING
504
MACHINE SEARCH?
506
NO
YES
ASSIGN NEW MACHINE ADDRESSES
508
HANDLE MISC MESSAGES
510
END

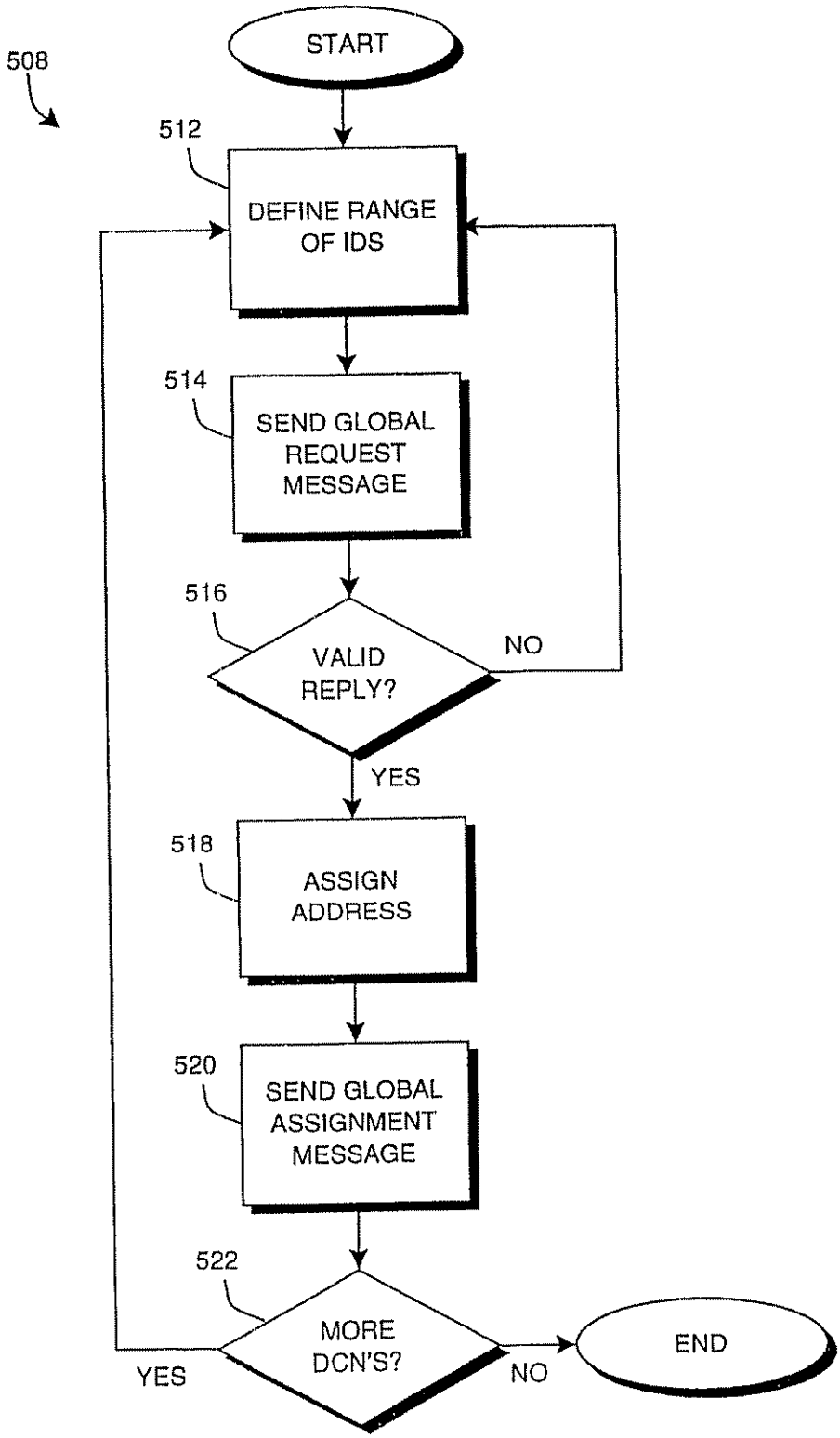

508
START
512
DEFINE RANGE OF IDS
514
SEND GLOBAL REQUEST MESSAGE
516
VALID REPLY?
NO
YES
518
ASSIGN ADDRESS
520
SEND GLOBAL ASSIGNMENT MESSAGE
522
MORE DCN'S?
YES
NO
END

Fig.31

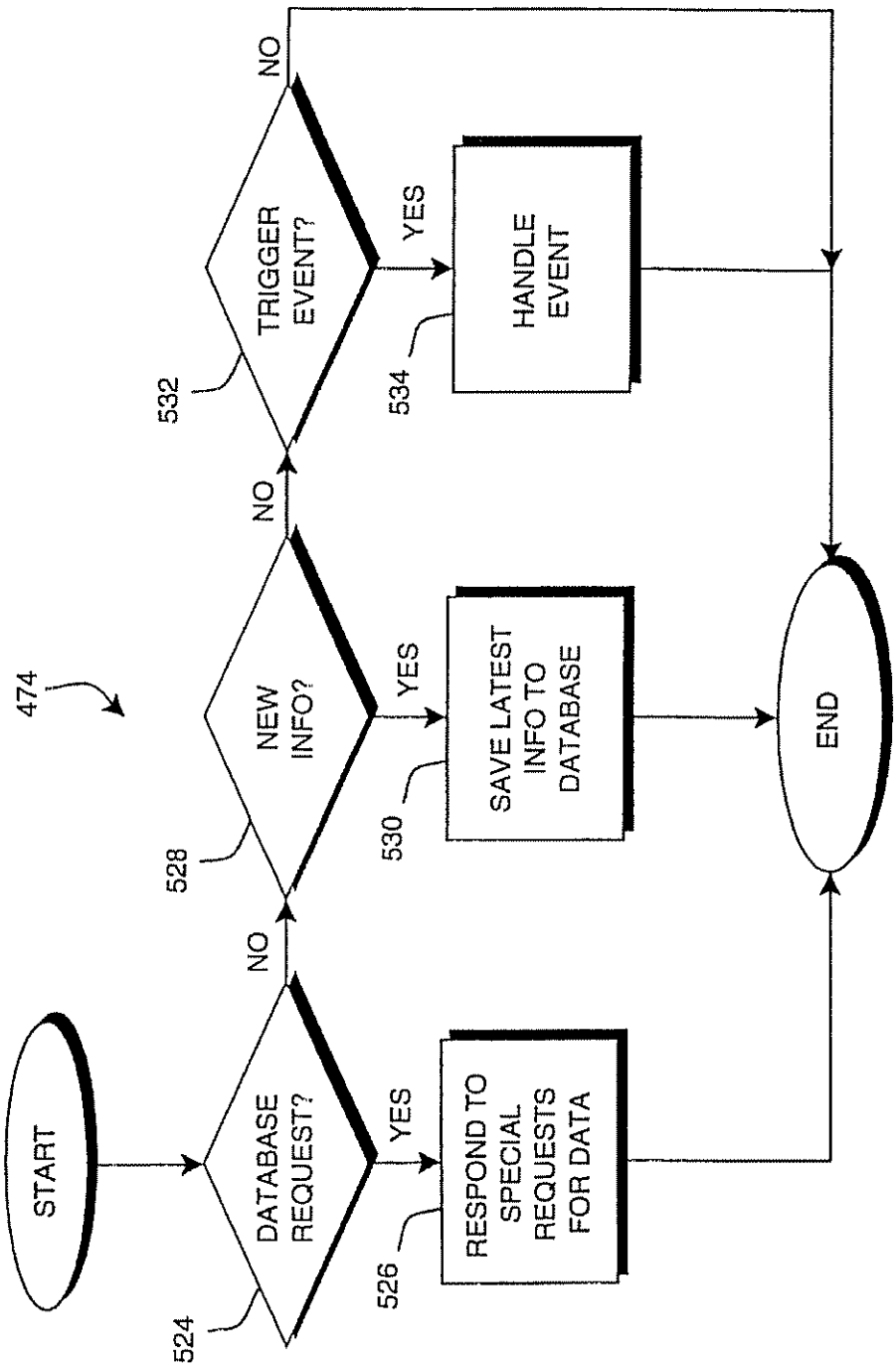

474
START
DATABASE REQUEST?
524
YES
RESPOND TO SPECIAL REQUESTS FOR DATA
526
NO
NEW INFO?
528
YES
SAVE LATEST INFO TO DATABASE
530
NO
TRIGGER EVENT?
532
YES
HANDLE EVENT
534
NO
END

Fig.32

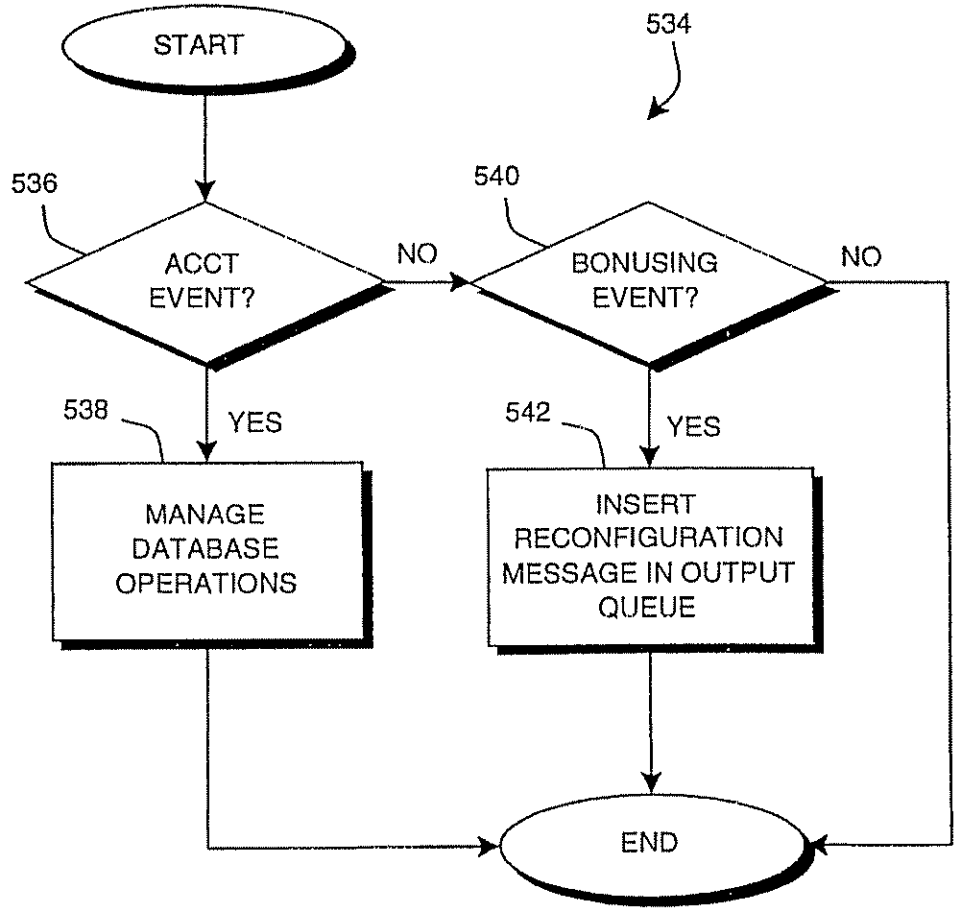

START
534
536
ACCT EVENT?
NO
540
BONUSING EVENT?
NO
538
YES
MANAGE DATABASE OPERATIONS
542
YES
INSERT RECONFIGURATION MESSAGE IN OUTPUT QUEUE
END

Fig.33

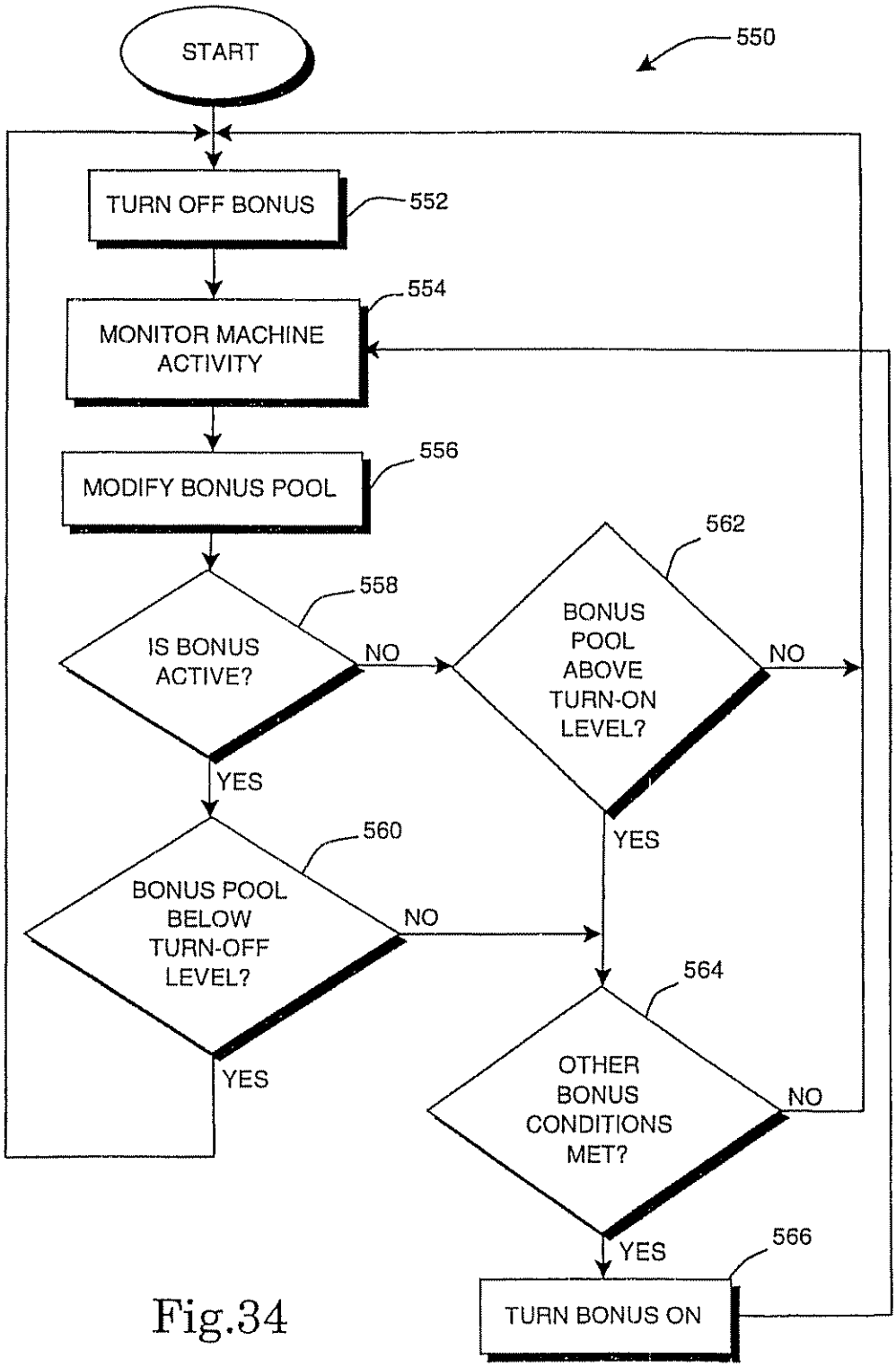

START
550
TURN OFF BONUS
552
MONITOR MACHINE ACTIVITY
554
MODIFY BONUS POOL
556
IS BONUS ACTIVE?
558
NO
YES
BONUS POOL ABOVE TURN-ON LEVEL?
562
NO
YES
BONUS POOL BELOW TURN-OFF LEVEL?
560
NO
YES
OTHER BONUS CONDITIONS MET?
564
NO
YES
TURN BONUS ON
566

Fig.34